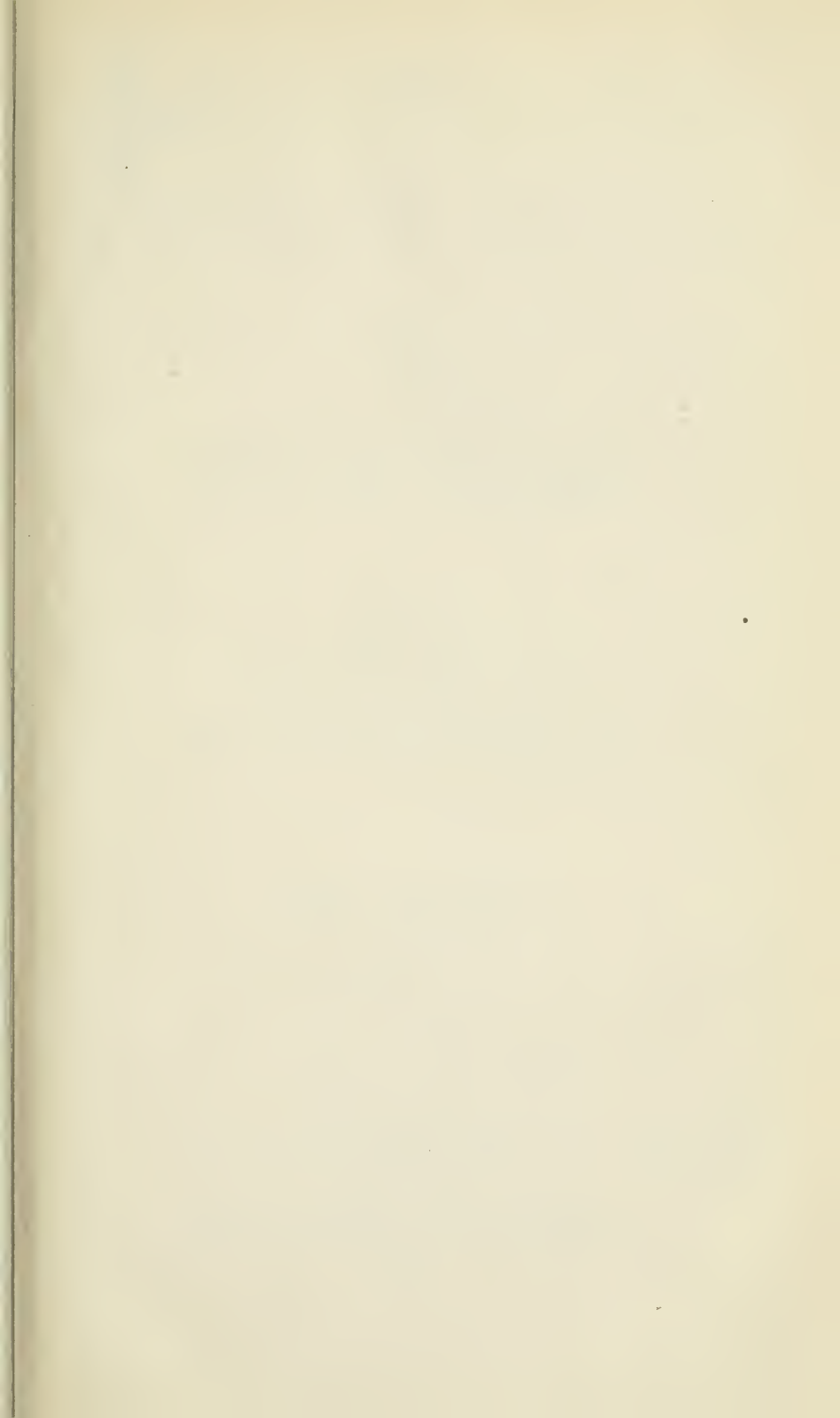


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AMERICAN JOURNAL

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OF THE

MEDICAL SCIENCES.

EDITED BY

ISAAC HAYS, M.D.,

SURGEON TO WILLS HOSPITAL,

PHYSICIAN TO THE PHILADELPHIA ORPHAN ASYLUM, &c. &c.

NEW SERIES.

VOL. V.

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TO READERS AND CORRESPONDENTS.

Communications have been received from Professor Gardner, Drs. King, Wharton, Harden, Young, Shipman, and Earle.

The following works have been received:—

A case of Carcinomatous Stricture of the Rectum, in which the descending colon was opened in the loin. By ALFRED JUKES, Surgeon to the General Hospital, Birmingham. With plates. London, 1842, 4to. (From Dr. W. C. Roberts.)

The History, Diagnosis, and Treatment of Typhoid and of Typhus Fever; with an Essay on the Diagnosis of Bilious, Remittent, and of Yellow Fever. By ELISHA BARTLETT, M. D., Professor of the Theory and Practice of Medicine in Transylvania University. Philadelphia, Lea & Blanchard, 1842. (From the author.)

The Evolution of Light from the Living Human Subject. By Sir HENRY MARSH, Bart., M. D., M. R. I. A., &c. &c. &c. Dublin, 1842. (From the author.)

The London Dissector, or Guide to Anatomy; for the use of students; comprising a description of the muscles, vessels, nerves, lymphatics, and viscera of the human body, as they appear on dissection; with directions for their demonstration. From the last London edition. Revised and corrected by E. J. CHAISTY, M. D., late Demonstrator of Anatomy in the University of Maryland. Philadelphia, Barrington & Haswell, 1842. (From the publishers.)

Clinical Aphorisms: a contribution towards the history and treatment of the Endemic Bilious Fever of the Eastern Shore of Maryland; designed for the use of the young practitioner. By PEREGRINE WROTH, M. D., Honorary Member of the Philadelphia Medical Society. Chestertown, Maryland, 1842. (From the author.)

An Essay on Diabetes. By H. BELL, D. M. P., one of the Librarians of the Faculty of Medicine of Paris. Translated by ALFRED MARCKWICK, late Externe to the Hôpital des Vénériens. Paris, &c. &c. London, 1842. (From the translator.)

A System of Human Anatomy, General and Special. By ERASMUS WILSON, M. D., Lecturer on Anatomy. London. American edition edited by PAUL B. GODDARD, A. M., M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. &c.; with one hundred and seventy illustrations by Gilbert. From the second London edition. Philadelphia, Lea & Blanchard, 1843. (From the publishers.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, August, September, October, 1842. (From the College.)

Medical Students' Guide; being a compendious view of the Collegiate and Clinical Medical Schools, the courses of private lectures, the hospitals and almshouses, and other institutions which contribute directly or indirectly to the great Medical School of Philadelphia; with the regulation of hours, fees, &c., and other information of importance to Students. 1842-3. By HEBER CHASE, M. D. Philadelphia, J. G. Auner, 1842. (From the author.)

Observations on the Epidemic Yellow Fever of Natchez and of the Southwest. By JOHN W. MONETTE, M. D. Louisville, Ky., 1842. (From the author.)

Remarks on Medical Reform, in a letter addressed to the Right Hon. Sir James Graham, Bart., one of her majesty's principal Secretaries of State. By Sir JAMES CLARK, Bart., M. D., F. R. S., Physician in ordinary to the Queen, and to the Prince Albert. London, 1842. (From the author.)

General Therapeutics and Materia Medica, adapted for a text book. By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, &c. in Jefferson Medical College, 2 vols. 8vo. Philadelphia, Lea & Blanchard, 1843. (From the publishers.)

Introductory Lecture to the Course of Medical Institutes in the University of Pennsylvania. Delivered November 4, 1842. By SAMUEL JACKSON, M. D. Philadelphia, 1842. (From the author.)

Some Account of the Origin and Present Condition of the Medical Institute of Louisville, with remarks on a late rejected report. Louisville, Ky., 1842.

Introductory Lecture to the Course of Instruction in the Medical Institution of Geneva College, (upon the occasion of opening a new building, 4th October, 1842.) By THOMAS SPENCER, M. D., Dean, Professor of the Institutes and Practice of Medicine. Geneva, 1842. (From the author.)

Physician for Ships; containing medical advice for seamen, and other persons at sea, on the treatment of diseases and on the preservation of health in sickly climates. By USHER PARSONS, M. D., late Surgeon in the United States Navy, President of the Rhode Island Medical Society, &c. &c. Third Edition. Boston, 1842. (From the author.)

Contributions to the History and Diagnosis of Croup. By JOHN WARE, M. D. Boston, 1842. (From the author.)

Report of the Joint Special Committee on the subject of the Effects of Lead Pipes upon Well-water in the city of Lowell. Lowell, 1842. (From John W. Graves.)

An Elementary Treatise on Auscultation and Percussion, or the Application of Acoustics to the Diagnosis of Diseases, with a Synoptical Table. By A. RACIBORSKI, M. D. Translated, with notes, &c., by MINTURN POST, M. D. New York, Collins, Keese & Co., 1839. (From Collins, Brother & Co.)

Elements of Physiology. By J. MULLER, M. D., Professor of Anatomy and Physiology in the University of Berlin. Translated from the German by WILLIAM BALY, M. D. Arranged from the second London edition by JOHN BELL, M. D., Lecturer on Materia Medica and Therapeutics, &c. Philadelphia, Lea & Blanchard, 1843. (From the Publishers.)

The Good Physician: being an Introductory to the course of Lectures on Materia Medica and Therapeutics in the Medical Department of Transylvania University, for the session of 1842-3. By THOMAS D. MITCHELL, M. D., Professor, &c. &c. Published by the Medical Class. Lexington, Ky., 1842. (From the author.)

Observations on the Admission of Medical Pupils to the Wards of Bethlehem Hospital, for the purpose of studying Mental Diseases. Third edition revised. By JOHN WEBSTER, M. D., &c., one of the Governors. London, 1842. (From the author.)

A Treatise on the Diseases of the Eye. By WILLIAM LAWRENCE, F. R. S., &c. &c. From the last London edition, with numerous additions, and sixty illustrations. By ISAAC HAYS, M. D., Surgeon to Wills Hospital, &c. &c. Philadelphia, Lea & Blanchard, 1843. (From the publishers.)

Introductory Lecture to the course of Medical Institutes in the University of Pennsylvania. Delivered November 4, 1842. By SAMUEL JACKSON, M. D. (From the author.)

On certain Medical Delusions: an Introductory Lecture to the course of Institutes of Medicine in Jefferson College. Delivered November 4, 1842. By ROBLEY DUNGLISON, M. D. (From the author.)

On the Usefulness of the Medical Profession, beyond the limits of the Profession: a lecture introductory to the course of Practice of Medicine in Jefferson Medical College of Philadelphia. Delivered November 4, 1842. By J. K. MITCHELL, A. M., M. D. (From the author.)

On Recent Improvements in Surgery: an Introductory Lecture to the course on the Principles and Practice of Surgery in Jefferson Medical College of Philadelphia. Delivered November 3, 1842. By THOMAS D. MUTTER, M. D., Philadelphia, 1842. (From the author.)

The Prescribers Pharmacopœia: containing all the Medicines in the London Pharmacopœia, arranged in classes according to their action, with their composition and doses. Revised and improved by an American Physician. New York. Samuel S. & Wm. Wood, No. 261 Pearl St., 1842. (From the publishers.)

The Obstetric Catechism: By JOSEPH WARRINGTON, M. D. Philadelphia, J. G. Auner, No. 333 Market Street, 1842. (From the Publisher.)

The Northern Lakes a summer residence for invalids from the South. By DANIEL DRAKE, M. D. Professor in the Medical Institute of Louisville. Louisville, 1842. (From the author.)

A Practical Treatise on Venereal Diseases; or critical and experimental researches on inoculation, applied to the study of these affections, with a therapeutical Summary and Special Formulary. By PH. RECORD, M. D. Surgeon to the Venereal Hospital of Paris, &c. &c. Translated from the French by HENRY PILKINGTON DRUMMOND, M. D. Philadelphia, Lea & Blanchard, 1843. (From the publishers.)

Lectures on the Diseases of the Urinary Organs. By SIR BENJAMIN C. BRODIE, Bart., F. R. S. Surgeon to the Queen. From the third London Edition with alterations and additions. Philadelphia, Lea & Blanchard, 1843. (From the publishers.)

The Principal Diseases of Females, together with the diseases incident to pregnancy and childbed, chiefly for the use of Students. By FLEETWOOD CHURCHILL, M. D., Lecturer on Midwifery and Diseases of Women and Children, in the Richmond Hospital, School of Medicine, &c. &c., with Notes and additions by R. M. HUSTON, M. D., Professor, &c. in the Jefferson Medical College. Second American Edition, in 1 vol. 8vo.—Lea & Blanchard, 1843. (From the publishers.)

Zeitschrift für die gesammte Medicin mit besonderer Rücksicht auf Hospital—praxis und ausländische Literatur Herausgegeben von F. W. OPPENHEIM, April, May, June, July, 1842. (In exchange.)

Archief voor geneeskunde. Ouder medewerking van eenige vaderlandische geleerden, vitgegeven door Dr. J. P. HEIJE. Amsterdam. (From Dr. Oppenheim.)

The India Journal of Medical and Physical Science. Edited by FREDERICK CORBYN, Esq. October, November, December, 1841, January, February, 1842. (In exchange.)

The India Review and Journal of Foreign Science and the Arts. Edited by FREDERICK CORBYN, Esq. September, November, December, 1841. (In exchange.)

The Medico-Chirurgical Review and Journal of Practical Medicine, October, 1842. (In exchange.)

The Edinburgh Medical and Surgical Journal, October, 1842. (In exchange.)

The British and Foreign Medical Review and Quarterly Journal of Practical Medicine and Surgery, October, and November, 1842. (In exchange.)

The London Medical Gazette, July, September, 1842. (In exchange.)

The London and Edinburgh Monthly Journal of Medical Science, September, October, and November. (In exchange.)

The Provincial Medical and Surgical Journal and Retrospect of the Medical Sciences. October, and November, 1842. (In exchange.)

Dublin Medical Press, Sept., October, and November, 1842. (In exchange.)

The New England Quarterly Journal of Medicine and Surgery, October, 1842. (In exchange.)

The American Journal of Science and the Arts, Oct., 1842. (In exchange.)

The Western Lancet, September, and October, 1842. (In exchange.)

The Medical Examiner, October, November, and December, 1842. (In exchange.)

The Western Journal of Medicine and Surgery, September, October, and November, 1842. (In exchange.)

The American Journal of Pharmacy, October, 1842. (In exchange.)

The Western Lancet, devoted to Medical and Surgical Science. Edited by L. M. LAWSON, M. D. October and November, 1842. (In exchange.)


The New York Lancet, October, November, and December, 1842. (In exchange.)

The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons. September, 1842. (In exchange.)

The Select Medical Library (New Series) and Bulletin of Medical Science. Edited by JOHN BELL, M. D., &c. &c. October, 1842. (In exchange.)

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All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

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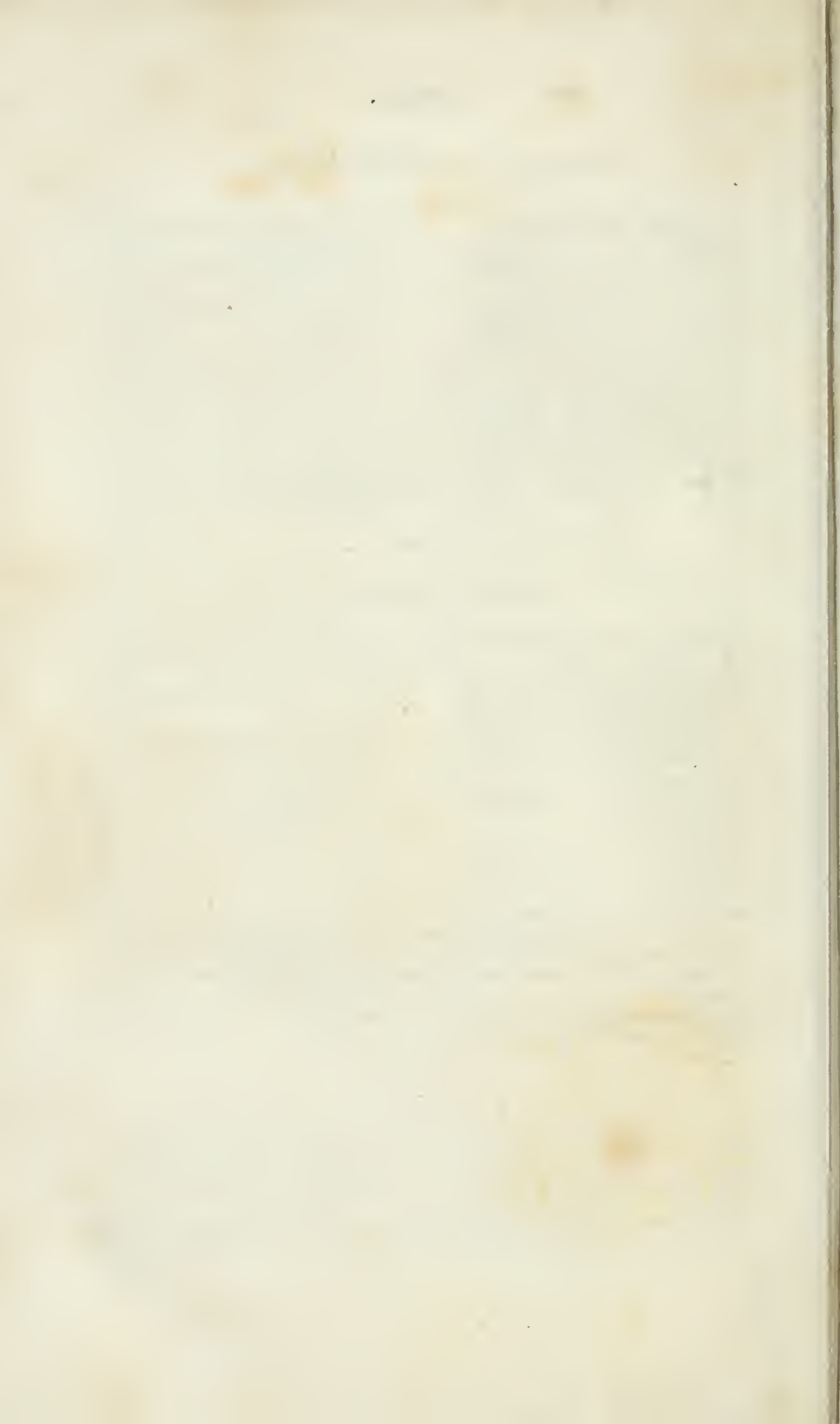
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JANUARY, 1843.

ART. I.—*Report of Surgical Cases treated at the Pennsylvania Hospital.*
By GEO. W. NORRIS, M. D., one of the Surgeons.

Non-malignant Mammary Tumour of four years' standing—Extirpation—Cure.—Ellen Curtis, ætat. 23, unmarried, from Gloucester county, New Jersey, was admitted February 17th, on account of a large tumour of the right breast. She states, that some time in the winter of 1838, she first perceived a small, movable tumour, situated apparently just below the skin, and on the inner side of the right mamma. This gave but little uneasiness, till it increased to the size of a walnut, when she received a kick on the part from a cow, after which it was at times slightly painful. She now covered it with a simple plaster, which treatment was continued till the month of May 1841, when she fell into the hands of a quack, who applied a caustic plaster to the part, and, in the course of a short period of time, pushed a lancet into the tumour one hundred and twelve different times. Excepting blood, no discharge followed these punctures. The application of the caustic plaster produced sloughing of the skin, which on separating, left an ulcerated surface that has continued up to the present period. After this treatment the tumour slightly enlarged, and has since that time presented a more angry and inflamed appearance. Five weeks since, owing to a large venous trunk having been opened by extension of the ulceration, hemorrhage to a very large amount took place, which was arrested upon the occurrence of syncope; and on the evening previous to her admission into the hospital, a second bleeding to the extent of three pints had occurred, from the same cause, which was arrested by pressure.

The tumour is now of large size, is very heavy, and is observed to be strongly lobulated, deep depressions existing between the lobes. These lobes are hard and inelastic, and the whole tumour is loose and free from

any attachment to the parts beneath. About one-fourth of the skin covering the breast is ulcerated, the parts below presenting the appearance of a healthy indolent ulcer, discharging laudable pus, and with nothing like a fungous growth protruding from it. No hemorrhage has ever occurred from the surface of the ulcer. The skin is reddened around the ulcerated part, but is at no point puckered, and the veins on the upper surface of the breast passing towards the neck, are very much enlarged. The nipple is observable, below the ulceration, healthy in structure, though nearly obliterated; at no time has there been any discharge from it. The tumour is not tender to the touch, neither is it painful, except on the approach, and during the continuance of the menstrual discharge; and with the exception of its weight and size, the patient, until within a short time, has experienced no inconvenience from it, and up to within two weeks of her admission into the hospital, had been actively employed in the domestic duties of a farmer's family. The left breast is of normal size and appearance. Her general health is good, and there is no enlargement of the cervical glands, or of those in the axilla. She is not emaciated, and her skin is free from sallowness, though her appearance is that of a person debilitated from large losses of blood. Her menstrual periods, which on the first appearance of the swelling were irregular, both as to quantity and time, are now natural, and with the exception of some enlargement of the tonsils, she presents no mark of a scrofulous taint.

Upon the first aspect of this case, it presented the appearance of, and might upon a superficial examination have been pronounced, a tumour of a malignant kind; but the history of its rise and progress, as well as a careful examination of it, readily showed its true nature. The age of the patient, the want of sallowness in her skin, her comparatively good general health, and the slight pain she had suffered from it, were alone sufficient to lead us to suspect its freedom from malignancy; and when taken in connection with the great weight of the tumour, its loose attachment to the surrounding parts, the slow progress and duration of the disease, the absence of glandular disease in its vicinity, together with the want of all fungous growth, and the discharge of laudable pus from its ulcerated surface, and its marked lobulated feel and appearance, proved conclusively that the character of this case had nothing in common with either cancer or fungus hæmatodes. The disease was looked upon as belonging to that class denominated chronic mammary tumours, and in the advanced stage in which it existed, was evidently a proper case for the knife. It differed, however, from most tumours of this class in its great size, and a correct diagnosis of it was particularly important, as we could confidently predict for the sufferer freedom from any return after the operation.

In consequence of the occurrence of her menstrual period a day or two after her admission into the hospital, the disease was not extirpated till 2d of March. The operation was done in the usual manner, the tumour

being included in two elliptical incisions. The hemorrhage following it was not great, a point of suture was inserted in the middle of the wound, and its sides, in addition, were brought together with two or three strips of adhesive plaster, after which the wound was covered with a little lint, and the arm supported by a sling.

Upon examination after removal, the tumour was found to be made up of a number of separate lobes, very closely connected together by cellular tissue. The structure of these lobes was very dense, and when divided presented very much the appearance of sweetbread. No vessels could be traced running through the tumour, which was completely surrounded by a covering of thick tendinous substance.

After the operation, she suffered from repeated attacks of erysipelas, as well around the wound as on the back, abdomen, legs, arms and face. These were treated by a careful use of the blue pill and mild cathartics, together with neutral or effervescing mixtures; the parts affected being bathed with soap liniment, and in consequence of her great debility, tonics and nourishing food of an unstimulating kind, in such forms and quantities as her excessively irritable stomach would allow her to retain, were administered. The applications to the wound, after the first day or two, were principally the common mucilaginous or water dressing, an adhesive strap being at the same time applied to favour cicatrization.

On the 25th of March, a large abscess seated over the lower part of the back, was opened. On the 31st, abscesses which had formed on both upper extremities above the elbows, were opened. By the 2d of April, the wound was completely cicatrised. On the 12th and 23d of April, other large collections of matter resulting as in the former instances, from erysipelas, were laid open, and on the 5th of May she left the hospital for Jersey, in good health.

Compound dislocation of the first, upon the second phalanx of the Thumb—Reduction impossible—Resection of the head of the first phalanx—Cure.—Neill Larkin, a stout drayman, ætat. 28, while engaged in unhitching his horse, had the end of his left thumb accidentally entangled in a link of the drawing chain, when the horse starting suddenly, dragged him some distance, and produced the accident just mentioned. He was brought to the hospital late in the evening of February 17th, a couple of hours after its occurrence, when strong and well-directed efforts were unsuccessfully made to reduce it, the clove hitch being attached to the extremity, after a first failure with the hand alone. On the following morning, I found the head of the first phalanx protruding considerably inwards through a wound which embraced more than one-half of the circumference of the finger; another effort at reduction was now attempted by bending the luxated phalanx and endeavouring to push its projecting head over that of the adjoining bone, but failing in this, I determined to remove the protruding extremity of the bone,

which was at once done with the metacarpal saw, to the extent of three or four lines, after which the parts were easily replaced. The edges of the wound were then drawn together with strips of narrow adhesive plaster and the part covered with dry lint, the hand and fore-arm being secured upon a splint. After the third day, the dressings were daily made, the part being only covered with simple ointment. No unpleasant symptoms followed.

March 23d. Wound entirely closed; on the 26th he was discharged, and on the 13th of April he called at the hospital, at which time he had good use of the thumb with some motion at the point of injury.

The difficulty of reduction in cases of simple luxations of the phalangeal articulations, even when the patient is seen soon after the accident has occurred, is well known, and the same difficulty exists in reducing and retaining in place compound injuries of this class. So hard is the reduction to effect, that it is asserted upon the authority of Bromfield, that the extending force has been increased to such a degree as to tear off the second joint in efforts to reduce the first. In compound luxations of the thumb, when found irreducible upon the application of a moderate degree of force, I believe the best practice to be that which was pursued in Larkin's case, viz., to saw off the end of the projecting bone. If the wound be large, and this be not done, observation shows that even when the part can be reduced, the dislocated end will in the majority of cases become displaced, as the inflammation necessarily following it, prevents the application of a sufficient degree of force by bandages and splints, to retain it in its natural position. One case of this kind I have myself witnessed, and another instance which occurred in Guy's Hospital has recently been published, in which, although the phalanx was easily reduced immediately after the accident, so much inflammation and constitutional disturbance occurred, as to make it necessary to remove the splints and other dressings which had been applied, and resort to cataplasms; the patient being ultimately cured, after entire loss of the first, and exfoliation of the extremity of the second phalanx. Resection of the phalangeal extremity is the practice recommended by Sir A. Cooper, in compound dislocations of these parts, where difficulty is experienced in their reduction, and has often been done with good success. Gooch states that he sawed off the head of the second bone of the thumb, and that a new joint afterwards formed. In two instances, where the head of the metacarpal bone of the thumb was dislocated towards the palm accompanied with wound, and reduction was difficult, the protruding parts were successfully sawn off by Mr. Evans. Bobe, Wardrop, and Roux have all been successful in like cases. The bad effects resulting from these injuries where the head of the bone is replaced, and which seem to be at least in part owing to the force necessarily made use of, and the state of tension afterwards kept up in the surrounding soft parts, by its return, has been often noticed. An instance came under my care, in which high inflammation and tetanus ensued upon the injury, where this practice was pursued; and Mr. S. Cooper reduced a case at the North

London Hospital, which was followed by severe inflammation, terminating in death, a week after the accident.

Aneurism by anastomosis—Ligature—Cure.—A female child, ætat. three months, was brought to the hospital on the 14th of February, with an aneurism by anastomosis of moderate size, seated a little in front of the anterior fontanelle. The mother stated, that at birth it was but just visible, that its growth latterly had been rapid, and that it was daily increasing. Two needles were passed transversely beneath the base of the tumour, taking care that they should enter, and pass out a little distance beyond the diseased structure, after which a ligature was drawn around its base sufficiently tight to strangulate it. Two days afterwards the pins were removed, and a poultice of slippery elm applied to hasten the separation of the slough. This came away on the following day, leaving a healthy ulcerated surface, which in a short time was completely cicatrised.

The mode of procedure adopted in the above case of transfixing the tumour by means of needles passed beneath it, at right angles with each other, and securing a ligature tightly around its base, is that which I usually employ, and is well adapted for the removal of all tumours of this kind of moderate size; the operation being safe, and quickly performed, and the pain caused by it but of short duration. The double ligature passed through the base of the tumour, which is often employed, may be followed by some hemorrhage after the tightening of it from the separation of the surfaces through which the needle is passed, besides which the shape or situation of the nævus may be such as to make it very difficult to fasten the ligature on either side around its base, entirely beyond the limits of the affection. A single needle placed under the centre of the tumour is also generally insufficient to procure the enclosure of all the diseased part within the loop of the ligature.

Varicose Ulcer—Davat's operation—Severe inflammation—Cure.—Thomas McCullen, a remarkably stout and healthy man, ætat. 28, was admitted September 21st, 1840, for ulcer on the inner and lower side of the right leg with great enlargement of the veins about the ankle. On the 26th two needles were passed through the vein a little below the knee, and a ligature twisted around them after the manner of Davat. No pain was complained of, or inflammation observed, for the first few days after the operation. On the 1st of October some redness was perceptible around the needles, and they were removed. On the 2d, the leg was swollen, hot, and painful, and on the day following, the man had fever, with pain extending up into the groin, the glands of which were much swollen. The tongue was furred, and the skin and conjunctiva of a yellowish hue. Small doses of calomel with neutral mixture, containing a small portion of tartarised antimony, and morphia in the evening, constituted the general treatment, while the local consisted in the application of leeches, followed by cold lead-water

to the groin and thigh, with a poultice to the leg, which was laid in an easy position upon a pillow. The symptoms continued unabated on the 4th, 5th, and 6th, during which the same treatment was pursued with the addition of a purge. On the 7th, his fever was less, and pain diminished. On the 8th, an abscess which had formed around the place of insertion of the needles was opened, and a large quantity of pus discharged from it. From this date he continued slowly to improve; the abscess, however, was long in filling up, and it was not until the 5th of December, that he left the hospital.

The number of patients applying for admission into our hospital, afflicted with varix, is considerable, and in them, as well as in private practice, I have uniformly dissuaded from all operations for their cure, so long as relief could be afforded by the laced stocking or bandage. In cases, however, where the patient was greatly incommoded by them, or urgently demanded it, I have occasionally operated—generally, by the method of Davat, and never, until in the instance of McCullen, have seen any severe symptoms produced by it. Death, however, is reported to have followed its employment, by Velpeau, S. Cooper, and others, and the severity of the symptoms in the above case, has induced me to report it, inasmuch as the operation is often done, and is looked upon, as indeed it generally seems to be, in no wise a dangerous one.

Fractured thigh of twenty-one days' standing—Union delayed by motion at sea—Firm union thirty-eight days after the application of Desault's apparatus—Re-fracture during convalescence—Renewal of the treatment—Cure.—Joseph Pool, ætat. 45, a healthy seaman of good habits, entered February 17th, with a fracture of the thigh near its middle part, which had occurred at Porto Rico, twenty-one days previously. The accident had been produced by a hogshead of sugar rolling over upon his limb, and had been properly dressed by a surgeon soon after its occurrence. A day or two after his injury, the vessel to which he belonged sailed for this port, and from that time the treatment of the limb was superintended by the captain, the extremity being placed in a long fracture-box, extending to the groin, and the foot fastened by means of a handkerchief to a cross-piece at its bottom, the fractured part being at the same time supported on its sides by pasteboard splints and thick pieces of sail cloth.

Upon admission, the limb was found to be free from swelling or excoriation. No provisional callus appeared to have been thrown out around the fractured fragments, which admitted of much motion. The upper fragment was drawn outwards, and the lower was thrown inwards and a little upwards, the limb being about one inch shorter than that of the opposite side. In order to place the fragments in good position, and make moderate pressure over the thigh, Desault's apparatus was applied to the limb, though but little extension and counter-extension was made, and a full diet with porter, was directed.

March 14th. A considerable mass of callus has been thrown out about the fracture, but there is still some motion; to-day, pressure with pasteboard splints, moulded to the limb by previously wetting them, and firmly applied by means of a roller, commencing at the foot, was made use of, the long splints being continued.

26th. Union perfectly firm. Desault's apparatus was removed so as to allow the patient to move his limb about the bed, the pasteboard being continued.

On the night of the 28th he re-fractured his limb at the point of previous injury, by turning over in bed during sleep, and entangling his foot in the sheet, in consequence of which the long splints were again employed. By the 17th of April the limb was found to be again firmly consolidated, when the apparatus was removed, and on the 7th of May he left the house with a good limb, and very slightly shortened.

Another case of fractured leg of some standing, which had occurred and been treated at sea, was under care and discharged during my term. The patient, *ætat.* 28, met with his accident on the 7th of November, by a blow from a chain cable. Both bones were fractured near the middle of the leg. He stated, that ten days after his accident, ulceration over the injured part occurred, after which the bone protruded. On the 29th of November he arrived here, and was brought to the hospital, at which time the extremity of the upper fragment was protruding, and was removed with the nippers by my colleague, Dr. Peace, the limb being afterwards placed and retained in a good position in a fracture-box. About the middle of January, a small piece of bone came away, when the wound soon cicatrised, and on the 28th of March he was discharged cured, union having been firm for some time previously.

A third case of delayed consolidation after fracture of the leg, treated at sea, occurred in the person of a sailor aged 22, who was admitted on the 23d of March. His fracture was in the lower third of the limb, and had happened twenty-three days previous to admission, from a blow upon the part. The bones were quite loose when admitted, and some projection of the upper fragment was present. The limb was placed, properly supported, in a good position in a fracture-box, and a generous diet allowed. Pressure by means of pasteboard splints and a roller were after a short time applied, and by the 14th of April union was complete, and a large amount of callus surrounding the injured bones. The limb was now removed from the box, and on the 5th of May he left the house cured.

The above cases are all well adapted to show the effect of motion in retarding the union of fractured bones, and the benefit derived from pressure and rest in their cure—a treatment which, as we have shown in a former number of this journal, is peculiarly adapted to, and likely to prove successful in, all cases of non-union, in which the cause can be attributed to motion, or want of proper position after the recent fracture, where the ends

of the bone are not absorbed, and are connected by fibro-cartilaginous substance, into which sufficient bone has not been deposited, or to cases where no sort of union has taken place, in consequence of previous want of perfect apposition, provided the ends can be brought into contact, and they have existed but for a short time. The case of Pool, too, is interesting on account of re-fracture of the bone during convalescence, and adds another to the many already recorded, going to show the ease with which the union of recently consolidated bones may be ruptured at their previous point of injury, the little danger there is of consequent inflammation of any degree of severity, and the rapidity with which these re-fractures become united—points all of practical interest, as bearing upon the question of the propriety of rupturing recent badly consolidated fractures.

Dislocation of the radius forwards upon the humerus, with ununited fracture of the ulna in its upper third, of eight months' standing—Resection of the extremities of the fractured bones—Failure.—Darby Nelson, ætat. 39, was admitted on the 6th of April, and gave the following history of his case.—About the middle of August, 1841, he met with his accident in the state of Indiana, by a horse falling and rolling over upon him, his arm being caught between the animal and the ground. The day after the injury, the luxation of the radius and fracture of the ulna were recognised by the practitioner called to attend him, who dressed the arm with two long splints, extending from the elbow to the ends of the fingers. The limb was retained in these splints for nearly three months, and when thrown aside, the fracture was found not to have united, and the luxation of the head of the radius was seen to be unreduced. Upon examination, the rounded head of the radius was felt on the anterior part of the humerus, just above the external condyle, rolling under the finger when the hand was rotated. The fore-arm could not be brought to a right angle with the arm, and when this was attempted, the head of the luxated bone was felt to strike against the humerus. Neither complete pronation nor supination of the hand could be performed when the arm was securely held. The condyles presented their normal appearance. The ulna was fractured three and a half inches below its upper end, and the superior fragment was drawn inwards and forwards, while the inferior was pulled upwards beneath it. The extremities of the bone passed each other to the extent of an inch or more. A great deal of motion existed at the point of fracture, and the muscles of both the arm and fore-arm were much shrunken. He complained of no pain when the part was handled. He was able partially to flex the fore-arm, but in so doing suffered pain, apparently from the pressure made on the soft parts by both of the fractured extremities. My colleague, Dr. Peace, who saw him in consultation, agreed with me in thinking that any attempt to reduce the radius would be futile, and as he was urgent for something to be done to give strength to the part, and the operation appeared to offer some chance of suc-

cess, we recommended that an effort should be made to procure union of the fractured ulna by resection of its ends. Accordingly, on the 13th of April the extremities of the bone were laid bare, and as much of them removed by a small saw as to allow of their being brought into apposition. The limb was then dressed as in ordinary cases of compound fracture, the sides of the wound being approximated, and a state of rest secured by the application of a proper splint.

On the 14th he complained of some pain in the arm, had a warm skin and a furred tongue. The bandage around the arm was loosened, and a purge and the effervescing mixture directed for him.

On the 15th he had high fever and erysipelas of the limb, which was placed in a carved splint, and had lead-water applied to it. His mixture was continued, with the addition of a portion of blue mass at bed-time.

By the 23d the erysipelas had disappeared: the wound looked well, but suppurated largely. Some time after this he suffered from a second attack of erysipelas of the whole limb, which terminated in abscess half-way between the elbow and shoulders. On the 6th of May he had a third attack of erysipelas. After the subsidence of this, his general health improved rapidly, though cicatrization of the wound progressed but slowly. As soon as the state of the extremity admitted of it, pressure was made use of, and during the whole treatment a state of perfect rest was ensured to the limb. The employment of pressure and rest was continued till towards the end of August, when, there being no probability of firm union occurring, they were discontinued. At this time it appeared, upon careful examination, as if the ends of the bone had been somewhat absorbed and rounded, and the fragments united by ligament.

The existence of great malposition in the fractured fragments in the above case, induced us to make choice of the operation of resection. The attacks of erysipelas from which the patient suffered after its performance, together with the free suppuration to which they gave rise, I am inclined to look upon as the principal causes of our failure to procure union. As an example of a rather rare accident, viz. luxation forwards of the upper extremity of the radius, the case is also interesting. This injury, even when uncomplicated, is often difficult to reduce, and when accompanied with a fracture of the ulna, its successful treatment would necessarily be greatly increased.

Fistula in Perineo following a fall—Operation—Cure.—At the commencement of my term of duty for 1840, I found in the wards James M'Cracken, a stout labourer, aged 26, affected with fistula in perineo. He stated that in September, 1839, he was upset in a railroad car, and was so thrown as to strike the perineum with force against the edge of the car. A small wound resulted from this, through which the urine flowed, and has continued to pass ever since the date of his accident. The fistulous opening

was found to be situated about two inches anterior to the anus and a little to the left of the raphe; it was small, and the urethra was so much contracted as to permit of the introduction of even a fine probe from this opening into the bladder with difficulty. A sound could be passed from the penis to within about an inch of the fistulous opening, at which point it was arrested by a hard unyielding mass, into which the finest bougie could not be made to enter. The opening in the perineum was carefully dilated until a full sized instrument could be passed into the bladder from it, when the following operation was performed.

The patient being placed and secured as in the operation for stone, a large staff was introduced through the fistula into the bladder, and a straight sound was passed from the mouth of the urethra down to the obstructed part, and carefully held by assistants. An incision was then made, exposing the point of the sound, and laying open the corpus spongiosum down to the track of the urethra, and extending below to the staff which had been passed into the bladder from the fistulous orifice. The sound was now withdrawn, and a full sized gum elastic catheter was passed from the penis down through the opening which had been made, and its end was then slid along the groove of the staff from this point into the bladder without difficulty. The latter was now withdrawn, and the sides of the incision were brought together with five points of the interrupted suture.

21st. Has but little pain; some swelling of the scrotum and parts about the wound. Cold mucilage to the parts.

On the 22d, union appeared perfect, and two of the lower sutures were removed.

24th. The catheter was found so clogged that it was necessary to remove it, and some difficulty was experienced in replacing it, in effecting which the adhesions were partially broken up.

27th. Wound looks well and is granulating. Some pressure on its sides is made by means of a compress and strip of adhesive plaster. The catheter becomes so clogged that it is necessary to change it every second day.

The wound after this date continued slowly to contract and cicatrise, the granulations being occasionally touched with nitrate of silver. By the 27th of July it had become extremely small, and the constant use of the catheter was omitted. By the 8th of August the wound had entirely cicatrised, and he urinated well. He was retained in the house in the capacity of assistant, in order to test his cure, until the 4th of November, when he was discharged cured.

Several months after his discharge, M'Cracken was seen by the nurse of the ward, and reported that he continued perfectly well.

The operation of incision for the cure of fistula in perineo, is but rarely demanded, as ordinarily these cases may be cured after all strictures have been overcome, and the urethra has been restored to its natural size, by the use of the catheter, by cauterisation with nit. argent., a heated wire, &c.

Where, however, cases are rebellious to this treatment, or as in the above instance, are accompanied by such circumstances as to render the use of the catheter impossible, nothing remains but a resort to it. When determined upon, care should be taken to have the urethra posterior to the opening well dilated prior to its commencement, and an instrument should always be passed into the bladder from this point previous to making any incision. For want of this precaution, patients have often been kept upon the table for a long time while a painful search was making for the opening, and more than one operator has had the mortification of seeing his patient removed to his bed without having succeeded in passing the instrument into the bladder.

Forearm torn off by machinery a little below the elbow—integument entirely stripped from the arm—Amputation at the shoulder joint—Cure.—Patrick Scanlin, ætat. 21, was admitted on the evening of June 27th. At 11, A. M. of that day his hand had been entangled in the machinery of a cotton mill, in Darby, and the right fore-arm completely torn off, a little below the elbow, as well as the whole of the integument covering the arm, leaving the muscles bare and lacerated. The skin covering the back was also torn up to some extent, but not separated, and the whole side and chest were severely contused. But slight hemorrhage followed the accident, and at the time of his admission into the hospital he had a full and strong pulse, and was suffering severe pain in the lacerated parts. A full dose of laudanum was exhibited to him and amputation at the shoulder joint determined upon. This was at once done (the patient being seated on a chair) by a circular incision of the muscles, while compression on the subclavian artery was made by my colleague, Dr. Peace. The parts were exceedingly vascular, requiring the application of an unusual number of ligatures—but little blood, however, was lost during the operation, the axillary being at once secured, and the other vessels being but of small size. The integument had been torn off to such an extent that it was impossible to close entirely the wound. The sides, however, were drawn together with adhesive strips, and covered with charpie, and a bandage afterwards applied around the chest. For a few days after the operation he seemed much affected by the weather, which was excessively hot, and had fever with delirium. These, however, soon passed off and he improved rapidly. On the 22d day, the axillary ligature came away, and on the 5th of October he returned home in good health.

Fore-arm torn off by machinery at its middle part—Fracture of the humerus of the same side—Amputation—Cure.—Hugh Bennet, ætat. 37, entered March 25th, at 9 P. M. Three hours previously his left hand had been caught in the machinery of a woollen mill and the fore-arm completely torn off near its middle. The bones had been fractured just above the wrist, and the soft parts having been stripped from them, they were left bare and protruding from the ragged stump for four or five inches. The humerus of the same

side was also fractured below the insertion of the deltoid, which, according to the statement of the patient occurred from muscular action alone, he having with great presence of mind, when he found himself caught by the machinery, placed his foot against a firm body in front of him, and made use of all his muscular force to draw the entangled limb from it—in his efforts to do which the humerus gave way. Great swelling existed at the elbow and at the point of fracture, and the arteries of the stump were seen hanging down below the surface, pulsating violently, but without giving out any blood, their ends being tightly twisted. But little blood had been lost. The ragged end of the stump was amputated by the circular operation, the fractured humerus being firmly supported by splints. The usual dressings were applied and the arm afterwards placed in two paste-board splints moulded so as to embrace it in two-thirds of its circumference. A large opiate had been administered previous to, and was repeated some time after the operation. With the exception of an attack of inflammation, which occurred around the elbow, no untoward symptom followed; this terminated in abscess, which was opened on the 4th of April. By the latter end of this month, the humerus had become firmly consolidated, and on the 19th of May he was discharged cured.

Dislocation of the shoulder of four weeks' standing—Reduction.—Micajah Diekls, ætat. 51, applied to me, January 18th, 1842, on account of a luxation of his right shoulder, which he had received twenty-nine days previously by a fall from a waggon. The head of the bone was in the axilla, and the distinctive symptoms of the accident were all well marked. The patient was muscular, and had already submitted to an attempt at reduction in the state of New Jersey, five days previous to my seeing him. The head of the bone admitted of considerable motion. On the morning following his arrival in town, the pulleys were applied, the extension and counter-extension being made in the usual manner, the first above the elbow and the latter by a sheet in the axilla, together with a strap over the acromion process of the scapula; at the same time a solution of tartar emetic was administered at short intervals. After the extension had been kept up about thirty minutes, a towel was passed under the head of the bone with a view of raising the latter from the axilla, which being done at the same time that the extending force was suddenly discontinued, produced a return of it to the glenoid cavity. A clavicle apparatus was afterwards applied. The day following the reduction, he complained of a good deal of soreness about the shoulder. The parts were well bathed with warm soap-liniment, and on the 25th he returned home—the stiffness gradually disappearing.

Dislocated shoulder of seven weeks' standing—Reduction followed by inflammation and suppuration about the joint—Cure.—Samuel Ickus, a stout countryman, ætat. 25, from Carlisle, consulted me in December, 1840, on

account of a downward luxation of the head of the right humerus received forty-eight days previously. The symptoms of the injury were well marked, and on the 21st the pulleys were applied. The extension was made gradually and moderately, for fifty-five minutes, previous to and during which time a solution of tartar emetic was freely given, and a large bleeding resorted to. At the end of the period mentioned, the head of the bone was returned to its socket, all deformity disappearing. Two days after the reduction he was attacked with inflammation around the orifice made in the left arm by venesection, which went on to suppuration, and an incision for the evacuation of the pus was made on the 28th. The right shoulder, which had become hot and swelled soon after the reduction, despite the employment of the usual means for allaying the inflammation, presented on the 30th more swelling, and an obscure sensation of deeply seated pus. On the 31st fluctuation was more distinct. A free opening was now made, and gave issue to a large quantity of well formed matter. After the opening of the abscess the discharge continued large till towards the middle of February, during which time he suffered from several attacks of erysipelas, which, at the time, was prevalent in the hospital. After this period, the discharge gradually lessened in quantity and became more serous. Early in March, an abscess formed at the posterior part of the axilla, which was opened and discharged freely. By the 7th of April the opening had closed, and all heat and swelling had left the part. On the 26th of the same month he left the hospital to return home, the head of the bone being evidently in the socket, though the parts about the shoulder were still much hardened and stiff.

Dislocation of the humerus into the axilla of ten weeks' standing—Unsuccessful efforts at reduction.—Daniel Collins, ætat. 50, was admitted June 11th, 1840, with a luxation of the humerus into the axilla of ten weeks' standing. He states that this accident was produced by a fall—that slight efforts were made to replace the bone immediately after the accident by an unprofessional person, and that a week before his entrance into the hospital, well directed and long continued efforts were made by a surgeon to reduce it. He was a blacksmith by trade, and, being anxious for a further trial to reduce it, had entered the hospital for this purpose. All the symptoms of luxation downwards were well marked—the head of the bone was drawn high up into the axilla and admitted of very little motion. The dangers to which he would be exposed by our efforts at reduction having been first plainly stated to him, the pulleys were applied on the 13th, and extension and counter-extension to as great a degree as was judged safe kept up for nearly an hour, at the same time that the muscular system was completely relaxed by the use of free bleeding and tartar emetic. At the expiration of this time, as the head of the bone appeared not to have yielded in any degree to the force employed, further efforts were desisted from, and on the following day he requested his discharge.

The subject of the reduction of dislocations of long standing is one of considerable interest to the surgeon. The class of cases and periods after the injury, in which attempts may be undertaken with any prospect of success, as well as the accidents that sometimes follow them, have not as yet received that attention which they merit. In the first of the above cases, the joint admitted of considerable motion, and the reduction at the end of one month was readily accomplished, and was not followed by more than the usual degree of soreness about the shoulder. In the second case, where the patient was young and robust, and the arm admitted of some motion, the reduction was accomplished nine weeks after the accident, by the employment of a less degree and shorter continuance of extensive force than I have repeatedly made use of, but was followed by inflammation and suppuration about the joint. This accident does not very often occur after the replacement of luxated bones, though cases have been observed in which it has succeeded the easy reduction of even very recent dislocations. In the last case, where the injury was of ten weeks duration, and the patient somewhat advanced in life, with the head of the bone drawn high into the axilla, we were foiled in our attempts to reduce it, and have understood that the patient afterwards submitted to a third pulling under the direction of a gentleman of this city, after previous division of some of the muscles or tendons about the joint, without better success.

I am well aware that surgeons have always examined into the degree of motion existing in an unreduced joint before determining upon the propriety of an attempt at reduction in cases where bones have been long out, but nevertheless am disposed to think that we have been accustomed to direct our attention too much to the period which has elapsed since the receipt of the injury only, without allowing the situation of the bone and the degree of motion due weight in determining the question. Abundant evidence might be adduced to show that luxations have often been reduced after the limits fixed upon by our high authorities, where the head of the bone admits of slight movements, and is not drawn up closely into the axilla, and where an opposite state exists they are frequently irreducible long before that limit is arrived at.

Compound fracture of the cranium with depression, unattended by symptoms of compressed brain—Application of the trephine—Cure.—Benjamin Prime, ætat. 18, was admitted, September 2nd, 1840. It was stated that early in the morning while asleep on board a vessel in the Delaware he had been struck over the head with an axe. Two small wounds were found to exist over the frontal bone a little to the left of the median line, rather more than two inches above the orbital ridge, which, on introducing the finger, were found to communicate with a depressed fracture of the bone. No symptom of compressed brain existed. The pulse was 74; temperature of the skin good; pupils natural. A short time after his admis-

sion, the depressed portion of bone was exposed by enlarging the wounds, and a small trephine was applied to the edge of the sound bone above the seat of fracture. Several small fragments of bone were removed, and the large part of the depressed portion, which was driven in for about half an inch, was then raised with the elevator. The coverings of the brain were uninjured. The soft parts were brought together with an adhesive strip and the wound covered with lint. Cold was applied to the head. Absolute diet. In the evening he was bled ℥xvi . and the neutral mixture with a small portion of tartarised antimony was administered every two hours.

3d. No pain or uneasiness in the head; pulse 80; tongue clean; wound not disturbed. A purgative was administered in the morning which produced a free discharge from the bowels. In the evening he complained of some uneasiness in the head and was again bled ℥xiv .

4th. The wound looks well. The neutral mixture and antimonial were continued, and as his pulse was full and strong, blood was again taken from his arm.

On the 5th, he was free from pain or delirium, but presented a hot skin, with a pulse of 84. He was again bled, but after the loss of two or three ounces, became faint. A mercurial purge was ordered in the evening. The wound was suppurating kindly, and was dressed with lint wetted with water.

14th. Since the last report the patient has continued to do well. A rigid diet, with antimonials, and simple cerate, or the water dressing to the wound having been continued, to-day he had slight epistaxis and complained of some pain in the head, to relieve which a vein was opened, but after a few ounces of blood were drawn, he fainted.

On the 15th, he was free from headache, the wound presented a healthy appearance, though the cheek of one side was erysipelatous. The medicine he had been using was omitted, and the following directed:—*R.* Antim. tartar. gr. i.; pulv. nit. potass. ʒi .; aq. fluvial. ℥vi . A table-spoonful three times a day.

On the 17th he was free from fever and all trace of erysipelas. On the 19th and 20th, small pieces of bone were seen to be loose in the wound, and were removed, and his diet was cautiously increased. On the 27th another larger portion of bone, and consisting of both tables, was removed. After this date, the patient gradually recovered his strength, cicatrization of the wound, however, which was occasionally touched with nit. argent. and sulph. cupri., progressed slowly, and was not complete till the middle of November. On the 2nd of December he left the hospital in good health to return to his friends in Eastport, Maine.

The following case, which occurred in my private practice, is not without interest.

Varicose aneurism at the bend of the arm—Ligature of the artery above

and below the sac—secondary hemorrhages with a return of the aneurismal thrill on the 10th day—Cure.—In May last, I saw in consultation with Dr. Rutter, Mr. K. ætat. 42, on account of a tumour at the bend of the arm, which had followed venesection. The patient, who had a permanent jaundiced appearance, but was enjoying an apparently good state of health, gave the following account of it. In March he was bled at his own desire by a bleeder who had performed the same operation for him, and generally in the same arm, some thirty or forty times. Nothing extraordinary occurred, other than that he remarked the flow of blood to be greater, and to be checked with more difficulty than had usually been the case. This was, however, done by firm compression, and on the day following finding the bandage tight, he removed it, and found the orifice to be completely closed. A short time after this, a small pulsating swelling was observed by him at this point, which slowly increased till a day or two previous to my seeing him, when, after some exertion with his arm, he observed a very considerable sudden augmentation in its size. Upon examination, a tumour of the size of a walnut was found at the bend of the arm; this was soft, pulsated strongly, and offered both to the touch and ear the purr and thrill peculiar to varicose aneurism. The vein running over the surface of the tumour, was greatly enlarged, and in its centre a cicatrix was perceptible, the skin around it appearing to be exceedingly thin. By pressure the vein could be readily emptied, and when this was done, a pulsating tumour was plainly felt more deeply situated between it and the brachial artery, which, by firm pressure could likewise be made to disappear. Compression on the artery above the tumour stopped all pulsation in it, on the removal of which it quickly returned to its original size. The pulse at the wrist was weaker than that of the opposite arm.

As the case was evidently one of false circumscribed aneurism, combined with aneurismal varix, and was increasing, I recommended him to undergo an operation for its cure, in which opinion Dr. J. R. Barton, who afterwards examined it, coincided. To this, however, the patient was averse, and I heard nothing more of him till the 16th of June, when I was again consulted, and found that he had been making use of strong and well applied pressure by means of a spring truss from the time I first saw him, and finding this painful and the tumour still augmenting, was now anxious to undergo the operation.

This was done on the 17th. The artery being compressed in the arm, the skin was divided over the tumour in its whole extent, without however opening the vein. The sac and dilated vein were then fully exposed by dissection as well as the artery, and ligatures were passed under the latter immediately above and below the sac. After careful examination to see that the ligatures surrounded the artery alone, these were secured—the lower one first. All pulsation in the part immediately ceased. The edges of the

wound were drawn into apposition by adhesive plaster, and the patient was put to bed with the limb extended on a pillow.

On the 20th, pulsation could be felt in the radial artery.

On the 27th a return of the thrill in the vein was detected.

Early on the morning of the 29th he was awoke out of a sound sleep by hemorrhage from the arm, which, when I reached him, a half hour after its occurrence, had been checked by a professional gentleman in the neighbourhood by the application of a moderate degree of pressure; near a pint of florid blood was said to have been lost. Finding him easy, I left him without in any way disturbing the wound, but before mid-day was again summoned on account of a renewal of the bleeding. Upon removing the dressings, this was found to proceed from the opening through which the upper ligature passed. The parts around the wound presented a good appearance, no inflammation existing, and the divided parts having entirely united except at the points through which the ligatures passed, neither of which were yet loose. Accurate examination of the brachial artery showed the extremity of the vessel above the upper ligature to be hard, and completely filled with coagulum, and this, in connection with the return of the thrill in the vein, which was now nearly as strong as it had originally been, and the direction from which the blood seemed to flow, led both my friend Dr. E. Peace, who was present with me, and myself, to look upon the hemorrhage as proceeding from some opening in the upper part of the sac, and it was determined to lay open the vein and sac, first passing ligatures under the vein above and below, and afterwards tie up any vessels which should be found to give out blood. This was at once done, and a vessel from which arterial blood was poured out was secured at the bottom of the sac.

This proceeding was painful, but gave rise to no undue inflammation or fever. On the 3d of July, the ligature on the lower end of the artery (below the sac) was found to be loose and was removed. On the 7th, there was a return of the hemorrhage to the amount of several ounces, which was checked by lint and compression, and during the night other recurrences of bleeding took place which were each time restrained by pressure. On the 8th there was a renewal of the bleeding to such an extent as to necessitate the application of the tourniquet. All dressings were now removed preparatory to securing the artery high up in the arm, but the hemorrhage was found to have entirely ceased. It was now concluded to apply pure creasote freely to the wound, which was done by means of a camel's hair brush, and lint saturated with this substance was afterwards placed over the part without any other dressing, the extremity being extended on a pillow; the upper ligature was seen to be loose and was removed. On the 12th, the lint having become loosened by suppuration, was removed, and dry lint applied, which was changed every second day till the 25th, when cicatrization had taken place.

In the beginning of the present month, (October,) I saw Mr. K., and found

no trace of pulsation or tumour at the bend of the arm—the extremity had regained all its former power.

The preceding is an example of the affection first accurately described by Park and Physick, in which a false circumscribed aneurism exists in connection with aneurismal varix. The course of treatment to be pursued in either form of aneurismal varix, does not seem to be yet well determined by surgeons; some recommending simple ligature of the vessel above and below the sac without an opening into it, some the Hunterian method, some the ancient operation for aneurism, while others are inclined to rely upon compression alone.

Despite the superficial situation of the vessel, but few examples of the cure of false aneurisms at the bend of the arm by the latter method, (compression,) can be cited, except it be made immediately after the occurrence of the accident, when, if applied with judgment, it will generally prove successful. The mere application of pressure over or above the wound, in the way it is commonly made after venesection, will, however, almost invariably fail. Where the artery is wounded and compression is resorted to, a folded piece of lint should be placed over the wound, and a roller well and evenly applied to the member from the fingers to the shoulder, which will prevent the œdema and great pain so often resulting from the application of pressure at the point of injury alone. The limb after the bandaging should be kept in a state of perfect rest by means of an angular splint applied on the side of the arm, for a week or ten days after the accident, during the whole of which time the patient should be closely watched, and the bandage renewed as often as may be necessary.

Where, however, some time has elapsed after the production of the disease, compression is little to be relied on in its results, severe pain, excoriation, and even gangrene of the sac, having all repeatedly occurred from its application. Except when very recent, too, the Hunterian method is now commonly looked upon as inapplicable in these cases, and is abandoned, general experience proving that it fails where the affection is of any standing. The old operation of laying open the sac and securing the vessel above and below the wounded point, is still recommended by many estimable authors, is often performed, and I believe, when the disease is of long standing, or of large size, is always the best and safest operation. In the case related, ligature of the vessel above and below the tumour, without meddling with its contents, was resorted to, inasmuch as the disease was only moderately developed, in order to avoid the increased danger attendant upon incision of the sac. The accidents to which the method exposes are well exemplified by the above case, and were such as will prevent my ever again having recourse to it, in other than the cases specified. In all the operations for varicose aneurism it is better, if possible, to avoid division of the vein; sometimes, however, this is impossible, and where divided, a thin ligature should be applied to it.

ART. II.—*Practical Observations on Chorea.* By CHARLES C. HILDRETH, M. D., of Zanesville, Ohio.

CASE I.—Miss H., ætat. 12, residing in Zanesville, had for many years been troubled with some of the symptoms of chorea; her excessive muscular action, however, was attributed by her family to exuberant animal spirits, and other causes. For the greater part of her life she has been pale and exsanguine in appearance. Her mind has been severely taxed in the acquisition of knowledge, while her muscular system has not been sufficiently developed by active exercise.

The character of her disease having become distinctly manifest, I was requested to prescribe for her, October 8th, 1841. Suspecting, from her general appearance, the presence of unhealthy secretions in her abdominal viscera, she was in the first place put upon an alterative cathartic course of blue mass, compound extract of colocynth, and rhubarb. This course was continued for the first week of my attendance, maintaining a gentle action of the bowels daily. Her evacuations were, in the first place, found to be dark and unhealthy, but in a few days assumed a natural appearance. As she had been the subject of an eruptive disease (probably urticaria), which was now suppressed, the tartar emetic eruption was brought out pretty freely over her stomach and bowels, and also over her spine.

In the beginning of the second week of my attendance (during which time her disease became daily aggravated), I began the tonic course so evidently indicated by her external appearance. She was directed a drachm of the precipitated carbonate of iron in port wine, three times daily. Morning and evening she took a shower bath, which was followed by sponging the whole surface with a saturated solution of common salt in proof spirit, and vigorous friction with a coarse flannel cloth. She was also directed a wine-glass of the strong decoction of the *cimicifuga racemosa*, to which some spices and a little brandy had been added. This was ordered three times daily, but on account of its nauseous taste, was seldom taken in the proper dose. A liberal diet of animal food was allowed, and as much exercise as possible in the open air. Involuntary muscular action began to diminish perceptibly in a few days after we commenced the tonic and invigorating treatment.

In the third week of my attendance, there was a marked improvement in her general health, strength, and appearance. The natural colour was restored to the lip, cheek, and tongue, which, when I first saw her, were in aspect nearly bloodless; appetite good, and flesh and strength returning.

In the latter part of the fourth week, as her recovery was not progressing as rapidly as I could have wished, the prepared carbonate of iron was suspended, and the sulphate of quinine given in full doses. This was directed in the dose of five grains, three times daily, in conjunction with the black

snakeroot. When one drachm had been taken in this way, it was quite apparent that she was improving much faster than while using the iron. As no bad effect was perceived from the medicine, no disturbance of head or stomach, the dose was increased to 20 grains per diem. This produced some tinnitus aurium, with increased fulness and force of the arterial circulation, and was not exceeded. In three days after this dose was given, involuntary muscular action had ceased entirely, nor has she had any symptoms of a return of her disease up to the present date—June 15th, 1842.

CASE II.—*Jan. 9th, 1842.* Was requested to prescribe for a little girl of Mr. M., ætat. 11, residing in Zanesville. The symptoms of chorea were well marked, and the same general plan of treatment was adopted—alterative cathartics, until the secretions became healthy; the shower-bath and stimulating frictions, warm clothing, liberal diet, and full doses of the iron and cicicifuga. This patient was also in an anæmic condition, and her disease increased upon her until the tonic course was commenced, when there was an immediate improvement in the symptoms. The chalybeate and other treatment was continued until there was a restoration of the colouring matter to the blood, and a decided improvement in strength; the quinine was then substituted for the iron, in the dose of five grains three times daily. This dose produced considerable tinnitus, and was not exceeded. The improvement in this case was equally marked and rapid as in the last. The quinine exerted a marked controlling influence over the disease, and in four or five days from its first exhibition, entirely restored the patient.

CASE III. *Partial Chorea, followed by Paralysis.*—Mrs. J. Y****, ætat. 18, of nervous temperament, and but four months married, began to menstruate when 17 years of age. This uterine function was but imperfectly performed, and attended with much pain. She has menstruated but twice since puberty, but has periodical monthly attacks of pain in her back and groins.

Was called to prescribe for her in an attack of pleurodynia, April 25th, 1842. This disease did not yield readily to the ordinary treatment, but left her spontaneously at the regular recurrence of the monthly period, when the pain was transferred to the lumbar spine.

The use of anodynes in liberal doses, in conjunction with counter-irritation, diminished the severity of the pain, but did not entirely relieve it until the expiration of the usual period of menstruation.

A vaginal examination developed nothing abnormal in the state of the uterus or vagina; no enlargement of the cervix, or body of the organ, nor accumulation within its cavity, or occlusion of its external orifice. Her amenorrhœa is probably the result of deficient constitutional vigour, as is indicated by her anæmic or chlorotic appearance, and will yield to the proper tonic and alterative treatment.

Two days after the disappearance of the uterine pain, she took intermit-

tent fever, to which she had been subject some six months previous. The paroxysm was quotidian and violent in character, the rigor of long continuance, the fever intense, and the perspiration profuse. Symptoms of chorea about the same time began to appear; when recumbent, they were scarce perceptible, but when sitting or standing, very obvious. The head was in constant motion when off the pillow; rapid flexion and extension; this was continued for hours, and entirely involuntarily, but ceased immediately the recumbent posture was resumed. When standing, the lower extremities were found but slightly under the control of the will; she could not walk without assistance, and but with great uncertainty of motion. Upon examination, the upper cervical and entire lumbar divisions of the spine were found very tender on pressure; the dorsal but slightly affected.

The treatment was commenced by the application of strips of blister to the sensitive portions of the spine, and with an obvious influence over the muscular action. When the blisters had nearly healed, a copious eruption of tartar emetic pustules was brought out over the same surfaces. The intermittent was in the mean time treated by large doses of quinine; twenty grains were given at one dose, four hours before the expected paroxysm. The first dose arrested it, but the remedy was continued to the amount of fifteen grains daily, for four or five days subsequently. The counter-irritation to the spine, in conjunction with the quinine, arrested all symptoms of chorea in the course of a week.

When involuntary muscular action had in a great measure ceased, signs of paralysis of the right leg became manifest. These symptoms came on gradually, and were evidently of spinal origin. There was loss of sensation as well as muscular action in the leg. The introduction of pins or needles, pinching, &c., gave no pain. When supported upon her feet, she had very little control over its motion; temperature of the limb but very slightly affected. This partial paralysis passed off in a few days under the influence of stimulating frictions to the leg, and increased amount of counter-irritation over the lumbar spine.

May 10th.—Found the patient free from signs of chorea and paralysis, and regaining her strength rapidly under the use of the preparations of iron and other invigorating remedies.

This case will justly be called *partial* chorea, having its origin undoubtedly in spinal irritation. If, however, it had been left to nature, or if some depressing or exhausting cause had been superadded, it would no doubt in a short time have become *general* in character, and from its numerous complications might have proved troublesome in treatment. The strong connection among some of the neuroses is also here exemplified.

The pain in the side is suddenly transferred to the uterus, and both are undoubtedly of a neuralgic character. The paralysis succeeds the chorea, and having each a spinal origin, yield to counter-irritation over the portions

affected. The intermittent yields readily to quinine in liberal doses, which has also probably exercised a happy influence over the chorea.

In this case there was no apparent connection between the spinal irritation and the intermittent. In other instances, however, it has been marked and obvious, and we have found it almost impossible permanently to arrest the ague, without first relieving the spinal affection. Some portion of the dorsal vertebræ, in such cases, has usually been found tender on pressure.

I have in other cases of chorea given quinine with zinc, in the small doses directed in the books, but with no perceptible advantage. Having observed the prompt action of a twenty grain dose of quinine in arresting the paroxysm of an intermittent, or a regularly recurring neuralgia of any kind, I was led by analogy to its use in large doses in chorea, in which disease the nervous system appears chiefly to suffer. Judging merely from its action in those few cases in which I have given it, I believe it will very much shorten the duration of the disease. The dose should be sufficiently large to produce *tinnitus aurium occasionally*, but not constantly, as there might be danger of seriously impairing the hearing if this symptom were allowed to persist. From fifteen to thirty grains a day, according to the age and strength of the patient, will be the proper quantity. The proper case for its exhibition should be selected: thus it would not be prudent to give it without preparation when there was evidence of cerebral determination or congestion, or fulness of the vascular system. The secretions from the stomach and bowels should first be rendered healthy, and if the patient be decidedly anæmic or chlorotic, the preparations of iron should precede or accompany it.

During my residence in Zanesville, I have treated but eight cases of chorea, all of which have occurred in females, and all, except two, under the age of puberty. These cases have recovered in from three to six weeks after being subjected to treatment. The *cimicifuga* has in nearly every instance been exhibited, and to it I believe I am chiefly indebted for the cure of a majority of the cases. I have found, however, no small difficulty in persuading my younger patients to take the proper dose of the remedy, on account of its nauseous taste. The pulverised root has generally been directed in the dose of a tea-spoonful three times daily, in syrup, but in this manner I have not been able to give it for any length of time. I have found the saturated tincture (of which one or two drachms is the proper dose), or the strong decoction with spices, and a little brandy to prevent acidity, the better forms of exhibition. To insure its sanative influence, as large a dose should be taken as can be borne without inducing nausea or vomiting, or much disturbance of the cerebral organs. For this purpose it should be gradually increased until this result follows, in the same manner that we increase the dose of *digitalis* or *colchicum*, to which, indeed, it bears no small resemblance in narcotic properties, although of much less activity. The purgative plan advised by Hamilton and others, and which was adopted in some of my earlier cases,

I am now convinced very much retarded their recovery. Nor can I conceive the plan of long-continued purging adapted to any case, after the secretions become healthy, unless there be evidence of a state of plethora, or signs of cerebral determination or congestion.

A directly opposite state has been found to exist in all the cases that have come under my observation. There has been a want of tone in the system, the powers of life have been depressed, the complexion pale and exsanguine, and every evidence of anæmia or chlorosis present. The secretions from the abdominal viscera have been but slightly deranged, requiring but few doses of alterative medicine to correct them. The tonic and invigorating treatment has invariably been beneficial, while any source of exhaustion or depletion has appeared to aggravate the disease. In my last case (Miss C., ætat. 18, residing five miles from Zanesville), the chorea appeared to be the direct result of severe antiphlogistic treatment, which had been adopted during an attack of pluro-pneumonia. The frequent use of the lancet, and other remedies, left her in a very weak and exhausted condition, in which state the symptoms of chorea first manifested themselves. Her menses were suppressed at the same time, and apparently from the same cause.

She was directed immediately a strong tonic and invigorating course of treatment. The precipitated carbonate of iron and cimicifuga, in full doses, counter-irritation to the spine, shower-bath, and stimulating frictions, warm clothing, exercise in the open air, &c. Her menses returned in the second week of the treatment. She made a tolerably quick recovery, but not until her flesh, strength, and complexion were in a great measure restored under the influence of tonics, liberal diet, &c.

That chorea is a disease quite amenable to treatment, may be inferred from the host of remedies offered for it by different authors. Of these the tonic occupy the first rank. Thus the preparations of iron, zinc, copper, silver, and arsenic,* have each their advocates; of the vegetable tonics, the cinchona and its preparations are most worthy of notice; of narcotics and antispasmodics, the cimicifuga, the belladonna, hyoseyamus, &c. claim attention. Of this class the cimicifuga is not only the safest, but by far the most efficacious, in all probability. The same may be said of iron among the tonics. Dr. Elliotson's experience leads him to confide in it, without the previous use of purgatives. Should the dose of the precipitated carbonate be found objectionable, the patient can perhaps be persuaded to take the proto-carbonate,

* A medical friend of undoubted veracity informs me that he once knew a case of chorea cured in four or five days *by mistake*. The patient was a mulatto girl of 17 years. Her physician had great confidence in the powers of arsenic in this affection. He therefore prescribed *ten* drops of Fowler's solution three times daily. The patient, thinking this dose entirely too small to do any good, took *twenty or thirty* drops instead of ten. As a matter of course, she was completely poisoned in a very short time, and was obliged to take the proper antidotes for arsenic to save her life. On recovering, however, from the effects of the poison, she was found to be permanently free from all signs of chorea.

the lactate, or the iodide, the last of which will be found peculiarly applicable to chlorotic cases.

ART. III.—*An Inquiry into the Pathology and Treatment of Varices.* By JOHN WATSON, M. D., one of the Surgeons to the New York Hospital.

To determine the safest and most effectual mode of curing varices, is a question that of late has excited much attention. Prior to the experiments of Sir Everard Home by the application of a ligature to the veins, the pathology of these vessels had only begun to excite attention. Since that period the subject has been more thoroughly investigated, and has led to greater caution in interfering with the affections now under consideration. But notwithstanding the unfavourable results that have so frequently marked the various modes of treating varices, those most familiar with the sufferings, dangers, and sometimes fatal consequences attending these diseases when allowed to progress, still look upon the question of their treatment as one of absorbing interest.

With a view to throw some further light upon this inquiry, it will be my object in this paper to offer some remarks upon the pathology of varices: to review in a summary way the various modes of treatment hitherto employed for the cure of them; and to give the details of the operative procedures to which I have myself resorted.

I shall pursue the subject in the order in which it has grown upon me; namely, by the study of individual cases.

Part First.—Cases and Comments. CASE I.—Mr. M., a teacher, about 30 years of age, came to the city from Orange county, to be cured of a troublesome varicose affection in his left leg, of several years duration; and of late so painful and annoying, as to prevent him from attending to his usual occupation.

The disease involved the whole of the great saphena, but was most marked in the internal saphena and its principal branches, many of which were excessively dilated, contorted, and nodulated.

The operation proposed by Dr. Stevens, with whom I saw the patient, and which he performed May 27th, 1839, was the sub-cutaneous division of the saphena major, just below the middle of the thigh. The vessel was raised with the integuments covering it, and divided from beneath outward, without wounding the skin except at the point of puncture. A compress and roller were afterwards applied, and the patient was directed to keep the limb at rest in the horizontal position.

June 3d. The dressings were removed for the first time. The wound had healed; there was still slight ecchymosis around it, but neither swelling nor inflammation. The varices, when the patient put his foot to the ground,

instantly reappeared, and were as well marked as before the operation; although perhaps not quite so large. *The course of the blood did not appear to be interrupted at the point of incision.* The edges of the wound in the vessel had in all probability united by adhesion, without obstructing its calibre; as they almost invariably do after ordinary venesection.

4th. The patient being anxious for more effectual relief, Dr. S. at my suggestion, performed the following operation:

An incision about an inch and a half long was carried through the skin, in the course of the vein, a few inches above the knee. After thus exposing the vessel it was raised on a probe and about half an inch of its calibre was excised. Free hemorrhage followed from both extremities of the cut. Slight pressure after a few moments put a permanent stop to the bleeding from the upper part of the vessel; that from the lower part was arrested by the application of a ligature. The edges of the wound were then drawn together by adhesive straps, and a compress and roller were applied as on the former occasion.

13th. The ligature came away; the wound was suppurating slightly; the surrounding parts were free from inflammation.

23d. The wound had cicatrised; the bandage was entirely removed. The varices appeared to be effaced, except at the inner and upper part of the leg, where the principal swellings had existed. The bandage was replaced, and the limb again put in the horizontal position.

28th. The patient returned to the country much relieved, but not entirely cured; the principal varix at the upper part of the leg being still apparent, and the blood filling the vessel even up to the level of the cicatrix.

I saw this patient several months after the operation. The varices had reappeared in all the branches of the internal saphena; but were less distended than they had formerly been, and gave him less uneasiness.

The first point established by this case is,—that the simple subcutaneous division of a varicose vein, is not a certain means of obstructing the passage of the blood through the vessel. This fact might, indeed, have been deduced from the results of ordinary phlebotomy. Every practitioner is aware that the arms of his patients may be marked by numerous cicatrices, the result of repeated venesection in the same vessel, and almost all at the same point, without diverting the current of the blood from its natural channel, or diminishing the calibre of the vein; although many of these lancet wounds may have been free in the division of integument, and of sufficient depth and extent to have completely divided the vessel; and all of them, as in this case, followed by compression.

The second deduction, and one perhaps of more importance, is that the excision of a considerable portion of a varicose vein, although it effectually interrupts the course of the blood at a given point, does not necessarily produce an obliteration of the vessel, either above or below that point; and is not a certain means of curing varices, either in the vessel itself, or in any of its branches.

CASE II.—Z. P. Esq., of Green county, N. Y., a gentleman about 56 years of age, tall and of spare habit, but accustomed to vigorous exercise, came to the city for advice on account of extensive varices in all the superfi-

cial veins of his right leg. Having in a measure failed to effect a cure in the foregoing case, it was not thought advisable to repeat the operation; and as the starched bandage was much in vogue about this period, and had recently been tried in a few similar cases at the Bellevue Hospital, I took occasion to try it on this patient. The leg was accordingly encased with a moderate degree of tightness in the starched apparatus, and the patient was directed to walk about as usual, and to allow the bandages to remain upon the limb as long as they would retain their proper position, provided they gave him no uneasiness.

I saw this gentleman about a year afterwards. He had worn the bandages about three months, during which time he had exercised much on foot, and had experienced much relief, and, as he said, comfort, in the use of the apparatus. But after its removal the varices were found to be as large and troublesome as ever. At this time he applied to me for advice on account of a pruriginous eruption with which he had been long affected, and which appeared to have some connection with the varices.

From the trial of the starched bandage in this case, I was induced to believe that, as a palliative measure, it possesses some advantages over the ordinary roller, as also over the military gaiter and laced stocking. When properly applied, the support rendered by this bandage is uniform; it is not readily disarranged, and may be worn without changing, for several weeks together.

CASE III.—Thomas Fitz Herbert, of Ireland, wire-worker, aged 40, was brought into the New York Hospital, late on the evening of May 17th, 1841, in a state of extreme exhaustion from loss of blood. He had long been subject to varicose veins, accompanied with an ulcer on one of his legs. While passing along Water street in the dark, he struck his diseased leg against a cellar door. The injury though slight in itself, gave rise to hemorrhage from one of the enlarged vessels; and before his friends had time to bring him to the Hospital, (no measures having previously been taken to arrest the discharge), he had lost so much blood as to be beyond the power of recovery. He died in a few minutes after admission.

The result of this case is sufficient to prove that varicose veins of the lower extremity constitute something more serious than “a trifling inconvenience;” and to justify the cautious and enlightened surgeon in further efforts to discover some certain mode of treating these affections, or to modify old modes in such a way as to render them more simple and efficacious.

CASE IV.—Mr. W., of Plainfield, N. J., hatter, aged 35, had for several years been troubled with an ulcer on his right shin, and a varicose state of the veins of the leg. On the 27th of May, 1841, he called upon me for advice. The integuments for some space around the sore were of a deep purplish hue almost black; the ulcer was small but irritable, and seated in the midst of an old cicatrix. The whole limb was somewhat swollen, and the external saphena, and its branches as low down as the foot, were enlarged, nodulated, tortuous, and painful to pressure: the internal saphena was unaffected. The varices were of more recent date than the ulcer, and appeared to have much influence in preventing it from healing. The disease

prevented the patient from pursuing his occupation, and he was anxious to submit to any treatment likely to afford him permanent relief.

I directed simple dressings to the ulcer, a roller to the limb, with repose in a horizontal position; and if at the end of a month the ulcer still persisted, I suggested the propriety of an operation upon the veins. The palliative treatment was pursued for the time specified, with little or no other effect than a slight diminution in the size of the ulcer. On the 17th of June I was summoned to Plainfield to perform the operation.

The patient being in a recumbent position, a fillet was applied around the lower part of the thigh for the purpose of rendering the vessels turgid. An incision about an inch and a half long was then made in the course of the external saphena, near the outer and lower edge of the popliteal space, with a small straight bistoury. After exposing the vein it was elevated on a probe, and thus left for the instant. A second incision was next made over a large branch of the same vessel, at an anastomosing point near the middle of the leg, and a probe inserted beneath the vein as at the first point. The same procedure was repeated on an enlarged vein just below the ulcer, above the ankle, at another point of anastomosis; and lastly, on a dilated vein upon the dorsum of the foot.

After thus completing the first steps of the operation, the fillet was removed. And while pressure was applied by the fingers of an assistant in the course of the vein, both above and below the last incision, with a pair of forceps I raised the vessel from the bottom of the wound, and with a pair of scissors removed about half an inch of its substance. No hemorrhage followed the excision of the vein. The same procedure was repeated on all the other portions of veins that had been exposed by the incisions, without giving rise to any bleeding. The edges of the wounds were then drawn carefully together by adhesive straps, and each wound covered with a compress. Finally, the whole limb was enveloped in a roller from the foot to the middle of the thigh. The patient was now directed to remain on his back for at least a week, and for the first twenty-four hours to be kept under the influence of anodynes. On the day following the operation, the roller, giving him no uneasiness, was coated with paste; and another roller placed over it, and also pasted, so as to render the whole dressing firm, and to prevent it from wrinkling.

The coats of the two uppermost pieces of vein that had been removed, were at least half a line in thickness. The inner tunic was of a pale flesh colour, and by the contraction of the vessel, thrown into longitudinal rugæ,—giving it the appearance of muscular fibre. The middle coat, more hypertrophied than the rest, was of a cartilaginous colour and consistence. The two lower pieces of vein, though dilated, were more nearly of a healthy structure; the inner lining, glossy and of its natural colour; the middle coat, sufficiently hypertrophied to prevent the vessel from collapsing.

No untoward symptoms followed the operation. The bandages were removed on the eighth day. The incisions had already united, the varices had been effaced, and the ulcer had cicatrised. To prevent a recurrence of the disease, before allowing the patient to use the limb, the starched bandages were reapplied. He continued to wear them while attending to his business, for nearly three months, and then left off every sort of dressing.

I last heard from this patient in April, 1842. He had had no return either of the ulcer or the varices; and the discolouration of the integuments around the cicatrix of the ulcer had nearly disappeared.

The treatment in the case now described being somewhat original; its

simplicity, its efficacy, and the promptness and durability of the cure, gave me considerable satisfaction; and determined me to pursue the operation, or to improve upon it in other cases. I had been led by reflection to its adoption after perusing the able memoir of M. Bonnet on the subject of varices, in which he undertakes to show that in order to their effectual cure, it is necessary in most cases, to interrupt the course of the blood through the diseased vessels, at numerous points along the limb. The suggestion is not new, inasmuch as it had been practised upon at least as early as the days of Celsus; and in modern times by Hunter, Brodie, Davat, and others. But it is of more importance than would appear from the writings of any of these authors; and M. Bonnet has presented it in a manner so forcible, as almost to deserve the credit of originating it.

Mr. Bonnet's modes of treatment in detail, however, I did not feel justified in imitating, sufficiently aware that there are serious objections against the pins and twisted sutures, as well as against the caustic, employed and recommended by this author, and that without having determined the fact by experiment, the operation by numerous excisions appeared to have many advantages over these.

In the first place it appeared to be more thorough and permanent in its effects; the pins as well as caustic often failing to obliterate the vessel, or to obliterate it permanently; and sometimes even failing to embrace it. Secondly, the immediate effects of the operation by excision did not appear likely to be serious, or attended with much pain; the wound usually healing by adhesion, or after slight suppuration. Whereas, by the other methods, sloughing and ulceration are necessary consequences. Thirdly, the cure appeared to be more rapid. Fourthly, by leaving the vessel in the same condition as after amputation or other ordinary operations involving a division of the veins; the process of excision, although it furnishes no immunity against either suppurative or erratic phlebitis, must almost of necessity be less frequently the cause of such accidents.

CASE V.—William Sutherland, of Canada, boatman, aged 21, was admitted into the New York Hospital, May 5th, 1842, with an ulcer about as large as a dollar on his left leg, produced three years previously by an injury; and with a varicose condition of the internal saphena and its principal branches, on the same leg, existing two years.

After admission he was kept in bed, with simple dressings to the sore and a roller over the whole limb, for about two weeks; by which time the ulcer had cicatrised. On the 21st of May he underwent an operation for the cure of the varices.

The steps of the operation were the same as those detailed in case fourth. The veins were exposed, and the exsection of a portion of the vessels was effected at four different points, commencing just below the knee, and proceeding downward, as in the former case. The principal peculiarities met with in this instance, independent of the loss of blood to the amount, perhaps, of ten or twelve ounces, were, first, that the veins lay deeper and were covered with a much denser layer of fascia; second, that at the upper-

most incision, in the course of the internal saphena, there was a concomitant vein lying over the principal one, that this smaller vessel was first exposed and taken for the main trunk; and that the principal vessel was separated from it by a very dense fascia, and was not exposed until after the division of the concomitant vein. The coats of all the vessels were found to be even thicker than in the foregoing case; and their inner lining was also corrugated longitudinally, and redder than natural.

The mode of dressing the wounds after the operation, and the subsequent treatment of the case, were in all respects the same as in the other case. The bandages were not disturbed until the end of the second week. On removing them we found the patient's limb free from varices, and all the wounds united by adhesion. In a day or two afterwards the bandages were reapplied, and the patient was allowed to walk about. There was no appearance of any return of the disease at the date of his discharge, June 19th.

Any attempt to treat the foregoing case either by the use of pins or of caustic, must, as appears to me, almost of necessity have failed; first, from the fact that the internal saphena lay so deeply as not to have been readily discovered, and much less reached by either of these means; and secondly, from the fact that the concomitant vein which lay above it, and was at first mistaken for it, if obliterated by either of these modes of treatment, would have a tendency rather to increase than to diminish the amount of blood circulating through the principal vessel, and thus to aggravate the disease rather than to cure it.

CASE VI.—Catharine Fitzgerald, of Ireland, a cook, single, aged 46, was admitted in the New York Hospital, March 5th, 1842, with numerous varices on both legs, but much the worst on the left leg. The disease was attended with an œdematous condition of both limbs, and involved the smaller as well as the larger vessels. The minute veins of the integuments were in numerous patches so much dilated as to render the surface purplish and arborescent. The disease had existed about five years. In consequence of the œdema and the burning and heavy sensation in the limbs when she remained standing for any length of time, she was unable to attend to her occupation. Her countenance was sallow, she was of a lymphatic temperament; and on closer examination I ascertained that for some months past she had suffered from a too frequent and profuse menstrual discharge, her periods returning upon her at the end of every second week.

Deeming the case, from this circumstance, an improper one for surgical interference, I directed her to be transferred to the medical department of the Hospital. Here under an appropriate course of treatment, (of which, however, I have no minutes), she was relieved of this difficulty; and about the first of May, she returned to the surgical department, to be relieved of her varices.

The operation was performed on the 21st of May, on the same day as in the preceding case. There were five different incisions, two of which were on the external saphena and its branches, and three on the internal saphena and the vessels going from it, at their anastomosing points; all of them below the knee. The veins, though much dilated, were not so much hypertrophied as in either of the former cases, and their inner lining was smooth and of its natural appearance. They lay immediately beneath the skin, imbedded in adipose tissue, and without the dense fibres or cellular coverings

described in the former case. The patient lost little or no blood during the operation. The subsequent treatment was as before described. That is to say, the patient, in order to allay the pain of the incision, and to prevent constitutional excitement, was kept for the first twenty-four hours, under the influence of anodynes. About the fourth day, the patient having hitherto been free from pain or excitement, a small circumscribed swelling was observed about the middle of the thigh, attended with slight pain and redness, and lying in the course of the saphena major. A blister was applied over this; and after a dose of castor oil had operated, the patient was again put upon the use of anodynes. No further inconvenience ensued, the swelling gradually subsided, but left an indurated spot which continued for some weeks.

The bandages were removed, and the incisions found to be cicatrised, at the close of the second week. The varices were now no longer visible, except that a few of the cutaneous venules were still apparent, giving to the skin the arborescent appearance already noticed. The bandage was again applied, and the patient allowed to use the limb. She remained in the hospital up to the 16th of July, using the limb every day without any disposition to a return of the disease. She would have submitted to an operation in the vessels of the other limb, had I thought the severity of the disease there sufficient to have required it.

The main peculiarities of this case were, that both the internal and external saphena and their branches were involved; and that this circumstance, contrary to the opinion of Bonnet, gave rise to no inconvenience. Other circumstances more or less worthy of notice, were that the limb was free from ulceration; that vast numbers of minute venules in all parts of the leg and foot, were proportionally as much dilated as the principal vessels, if not more so; that though tortuous, lengthened, and dilated, the vessels were not proportionally thickened, their coats having apparently suffered from simple passive enlargement. From the number of vessels involved, and from the extension of the disease to the ultimate branches of the veins, the operation was undertaken with less confidence of ultimate success, than the result of the case would have justified.

CASE VII.—Michael Neale, of Ireland, seaman, aged 29, was admitted June 21st, 1842, with a small ulcer on each shin, and varices on both legs. He stated that about five years previous, while in the East Indies, he had been confined to his bed by sickness for several months; after which, in attempting to walk, his limbs became swollen, and the varices soon afterwards appeared. Those on the left leg having been the largest from the first, were the first to give rise to ulceration. The ulcer on the other leg had existed about three years. Both of these sores had several times cicatrised and as often reappeared. Soon after the first occurrence of the varices on the left leg, an attempt was made to cure them by a deep longitudinal incision through the diseased veins near the upper part of the leg. The wound gave issue to very free hemorrhage, which returned every time the patient put his foot to the ground, for several days subsequently; but had no effect in diminishing the disease. Both legs have ever since continued swollen; the varices are gradually enlarging. The distress attending these frequently obliges him to remain on his back, and neglect his business.

After his admission he was for a few days confined to his bed, with simple dressings to the sore, and a roller over each leg; and with laxatives and low diet to relieve any inflammatory tendency, and prepare him for the operation.

On the 25th of June, the operation was performed on his left leg. The varices were so numerous as to require nine different incisions; one of which was on the saphena major, a few inches above the knee, five upon the internal saphena, between the knee and ankle; and three upon the external saphena and its branches, or the communicating vessels between it and the internal saphena, at their points of anastomosis. The veins though much dilated, were not generally as thick as usual; but in this respect they varied at the different points of incision.

No unpleasant symptoms occurred. The dressings were removed at the end of the second week. The ulcer had healed and all the cuts but two had united by the first intention; and these two cicatrised soon afterwards.

On the 20th of July, the disease in the left limb having been effectually cured, the patient underwent another operation on account of the varices on the right leg, the ulcer there having already disappeared. Three incisions only were required, all of them below the knee, the first in the internal saphena, the second on a branch of this, and the last on a mesh of varices at the posterior and lower part of the leg, in one of the main branches of the external saphena.

At the end of a week the dressings were removed; the wounds had united, and the varices had disappeared. The patient was discharged, cured, August 9th.

The most striking peculiarity of this case is, that in operating on the right limb, while attempting to pass the probe beneath the vein at the bottom of the second incision, the vessel was found in close contact with a cutaneous nerve of considerable size, which was indeed at first mistaken for the vein itself. The probe having passed beneath this, gave so much pain along the whole limb and down as far as the toes, that the mistake was at once detected. In detaching the vein some caution was necessary to prevent this nerve from being injured. A similar complication by almost every other mode of operation, whether by subcutaneous section, by pins, or by caustic, might have led to serious consequences; whereas, by exposing the vessel, as in the mode described, the nerve may be avoided with scarcely any risk of danger.

The other points of interest in this case, are—1st, the great number of incisions necessary in the first operation; and 2d, the interception of the blood through both the external and internal saphenas, in both limbs.

CASE VIII.—Mrs. Cohill, widow, a native of Ireland, aged 40, a washerwoman of full habit, but in feeble health; had suffered from extensive varices for six years, which, as she thinks, were originally caused by hard work. In June, 1838, she first came under my care, having at that time had several severe hemorrhages from a small ulcerated spot just below the knee on the left leg. The bleeding had recurred every day for eight or ten days in succession, and had reduced her excessively. Having no means of treating her conveniently elsewhere, I had her transferred to the hospital. On the evening of her admission, whilst in bed, and with a bandage on the limb, the hemorrhage started anew, and before the nurse had time to summon the

house surgeon, the patient had lost, according to the reckoning of those about her, at least two chamber-potfuls of blood. A pin was immediately passed transversely beneath the bleeding vein at the point of ulceration, and compression effected by means of a thread, adhesive straps, a compress and roller. The limb was kept elevated for several days afterwards. The wound healed; there was no recurrence of hemorrhage from this point; and the patient in a week or ten days left the hospital, with the varicose condition of her limbs as bad as at the time of her admission.

In August, 1841, she had a return of hemorrhage from another minute point of ulceration at the upper and outer part of the right leg. This was arrested by compression, aided by a few days repose in bed. From that period up to the 13th of August, she had no return of bleeding; but the varices were continually increasing, giving her much pain, causing her feet and legs to swell, frequently preventing her from attending to her work, and oftentimes confining her to her bed.

She called upon me, much alarmed, on the morning of the 15th of August, 1842, stating that on the night of the 13th, while engaged in ironing clothes, one of the diseased veins near the outer ankle of the right limb suddenly burst with so much force as to throw the blood to the distance of several feet from her, and that before it was arrested she had lost at least a quart. I found the veins in both limbs exceedingly enlarged; but those on the right leg, in respect to the number and size of the varices, in a worse condition than I had ever before witnessed, presenting by their elevations and numerous convolutions, the appearance of a cluster of small snakes winding around the limb in all directions. The enlargement and varicose convolutions extended throughout the whole length of the saphena major, involved all the superficial veins of the leg—and probably many of the venules in the subcutaneous cellular tissue, as well as in the skin. The irritation of the varices had excited a chronic pruriginous papular eruption, which formed large patches on different parts of the legs, but most extensive about the feet and ankles. She had often attempted to wear a bandage on the limbs; but, as she stated, it caused the veins to swell and to become very hard and painful, so that of late she has not ventured to use it. For some days prior to each recurrence of hemorrhage, she had observed a small red sore spot over the vein from which the bleeding at length issued. The point from which the last bleeding issued was not larger than a pin's head, and had already ceased to be swollen or inflamed. I applied a compress over this part, and secured it with a roller, which was carried over the whole leg as tightly as the sensitive integument would bear it. On her way home, the pain of walking obliged her to rest at the house of a friend; and while there the blood again started with violence from the same point. The loss of blood at this time was greater than at any former period, and was arrested by the syncope which it induced. I saw her in the course of the afternoon. She was still in a state bordering on syncope. The varicose enlargement had to all appearance been entirely effaced by the bleeding. The compress and roller were again adjusted. A slight oozing again occurred during the night. On the following morning she was admitted into the hospital.

In a few days after admission, she complained of nausea, loss of appetite, and slight headache, and was somewhat depressed in spirits. She was confined to her bed, and put on low diet and laxative medicine. The cathartic, however, rather aggravated her symptoms, irritated her stomach and bowels, and excited vomiting. These unpleasant feelings were relieved by small doses of Dover's powder. She could not at first bear much pressure on the

right leg—the veins being somewhat tender. An evaporating lotion was applied to them, which relieved the soreness.

On the 20th of August, her unpleasant symptoms having subsided, (although her tongue was pale and glossy, and her spirits still somewhat depressed,) the operation was performed on the right leg. Seven sections were necessary; one of which was on the saphena major, just above the knee; all the rest were on the internal saphena and its branches, the lowest of them being just above the inner ankle, in a mass of varices with which the small vein that had given issue to the recent hemorrhages communicated, by winding from below the outer ankle upwards and backwards, behind the tendo Achillis.

The vessels were unusually thin, and when once exposed and separated from their cellular attachments, they suddenly contracted, apparently to their natural size. In consequence of their tenuity, much caution was necessary to prevent them from being injured before isolating them. One of them was in fact perforated with a director by one of my colleagues, in attempting to pass the instrument under a thin layer of fascia which I was about to divide. At the bottom of one of the incisions, after passing the probe beneath a superficial vein, it was found that several other veins, still larger, lay somewhat deeper, and were yet covered by dense cellular tissue. This was divided, and these deeper veins lying immediately upon the sheath of the muscles, were taken upon the probe with the other, and in due time divided. The dressings and treatment immediately after the operation, were the same as in former cases.

About seven hours afterwards the patient became somewhat feverish, with headache, nausea, disposition to vomit, with pains in her back and lower part of the bowels. Her pulse was slow, however, and the appearance of her tongue as before the operation. A small dose of solut. sulph. morph. was administered and followed occasionally through the night with effervescing mixture. The excitement was somewhat increased on the two following days; but it was soon ascertained that the patient's menses had appeared immediately after the operation, and her state of excitement was attributed to that circumstance.

On the 23d the febrile symptoms had mostly subsided, but the patient had some soreness in the limb. The bandages were at first loosened, and at the end of a week entirely removed. Some of the incisions had closed by adhesion, one or two were suppurating slightly; but two of them had become more inflamed than usual, and threatened to excite severe inflammation in the loose cellular tissue of the calf of the leg. One or two small abscesses did in fact appear. At the close of the second week, the inflammation had entirely disappeared, and in the course of a few days afterwards, all the incisions had healed, and the patient resumed the use of the limb entirely free from varices except in the venules of the skin. But some of the convolutions of the veins were still visible by their bluish colour. She was discharged cured of the disease in the right limb, Sept. 16th, 1842. The patient was anxious to undergo the operation for the cure of the disease in the other leg, but the state of her family at home required her presence, and she was obliged to leave.

The peculiarities of this case are—the number and extent of the varices; their complication with a pruriginous eruption; the frequency and alarming severity of the hemorrhages; the thinness of the coats of the vessels and their marked disposition to contract the calibre of the veins after being ex-

posed and detached from their cellular envelopes; and finally, the febrile symptoms and suppurative inflammation, following the operation.

Thus far the operation by repeated exsections had been attended with uniform and marked success. Before proceeding to relate my two remaining cases, which terminated unfavourably, I shall offer some observations on the most striking peculiarities of six others, in which the operation was seven times performed by my colleagues; all with complete success.

CASE IX.—On the 7th of June, 1842, Dr. J. Kearney Rodgers operated on a patient, making six exsections in the course of the internal saphena and its branches, either over large varicose masses, or at distinct anastomosing points. His mode of operating consisted in cutting boldly down upon the veins, and removing portions of them, without previously elevating them on a probe, and finishing the exsection at one point before commencing the incisions at the points below. This method has the advantage of being more expeditious than the other; but, on the contrary, it exposes the patient to a greater loss of blood.

In this case the disease had existed six years, and was complicated with a chronic ulcer. The patient, a currier, aged 24, had been operated upon about three years previously, by a physician in Connecticut, who applied a ligature upon the saphena major about one-third way up the thigh. The ligature was cut away on the fifth day: the wound healed by suppuration, and as soon as he began again to use the limb the varices were found to be as large and troublesome as ever. About a year after this he submitted to a second operation in the Massachusetts Hospital. Here caustic potassa was applied along the course of the vessel, on the skin, just below the point of the first operation. The result of this second operation was as ineffectual as that of the first. The vessel appeared to be as large and full at the point of the primary ligature as at any other place, and, as far as I could judge, the caustic had not produced an eschar of sufficient depth to reach the vein at all.

After the third operation, the limb was dressed as before described; no unpleasant symptoms ensued. The bandages were removed at the close of the second week, by which time the ulcer had closed; the varices had disappeared; almost all the incisions had cicatrised; one or two remaining open a few days longer. The patient was discharged cured on the 1st of July.

On the 23d of June, Dr. R. operated on two other cases. The first of these,

CASE X., was an Irish porter, aged 38, who was brought to the hospital in a state of insensibility, and sinking from sudden and profuse flow of blood. The point from which the blood had issued was a small indurated and elevated ulcer over a varicose vein, at the upper and inner part of the leg. About seven years previously he had had a similar bleeding from a ruptured varix near the same point; and about two years ago a second bleeding from an ulcerated spot similar to the present. The first attack came on soon after heavy lifting; the second whilst he was getting out of bed in the morning; and this last, in which the loss of blood was more profuse than in either of the others, came on whilst he was descending a flight of stairs. The varices had existed many years; were originally caused by hard labour. He had never had any large ulcer on the leg, and no other

sore than the small indurations that occur over the varicose swellings, and from which, by sudden giving way of the skin at a very minute point, all the hæmorrhagies have issued.

In this case there were seven incisions made in the internal saphena and its branches, and about an inch of the vein removed from each. The bandages were removed at the end of a fortnight, by which time the cure had been effected. The patient was discharged on the 26th of July.

CASE XI.—Dr. R.'s third case had been several months in the hospital under treatment for varicose ulcers on both legs. The ulcers had preceded the varices, and these had existed about two years; and were worse on the left leg, whence they extended to the common saphena. The superficial epigastric vein on the right side was also slightly varicose. The ulcers had nearly healed at the time of the operation, which was performed only on the left leg. Four incisions were necessary, all on the internal saphena: three above and one below the ulcer. The progress and result in this case were the same as in the foregoing instance. The patient was discharged, cured, on the 25th of July.

On minute examination of the exsected portions of veins in these two cases, I found them contorted, nodulated, and dilated, as usual. Their coats irregularly hypertrophied, were at some places nearly the tenth of an inch thick, and the outer coat in various points almost as hard as cartilage. The inner coat was corrugated into longitudinal folds of a pale pinkish colour, which changed after a few minutes exposure to a deeper red, giving the corrugated surface the appearance of muscular fibre. The valves were neither thickened nor irregular; so far as I could judge, they appeared to be perfectly healthy. Besides the longitudinally folded appearance of the inner coat, there were also numerous transverse folds involving all the coats of the vessels, puckering them and throwing their sides into little pouches and irregular convolutions, which could not be effaced or straightened out, even after the vessels had been separated from the dense cellular bands on their outer surfaces that appeared to hold them in these irregular positions. The coats of the vein at the concave side of these convolutions, were usually thicker and harder than at other parts. These morbid appearances in the vessels, as well as in their cellular investments, appeared to have been the result of chronic inflammation. The vessels, after their removal and longitudinal division, appeared to contract considerably in their transverse measurement.

CASE XII.—On the 23d of July, 1842, Dr. Hoffman operated on the right leg of a patient for the cure of varices complicated with an ulcer and with a chronic eczematous eruption, the result of the varices. The patient lost considerable blood. There were four points of incision; three on the inner saphena and its branches, and one on the outer. The dressings were removed on the 9th day: all the cuts, with one exception, had then been cicatrised and the varices had disappeared.

CASE XIII.—In this patient, (a German seaman of middle age and good general health,) Dr. Buck operated on both legs: on the right leg, August 18th, 1842; and on the left, September the 17th, following. The varices were so prominent on the right leg, as to enable the operator to disperse

with the use of the fillet around the lower part of the thigh. Seven incisions were necessary over the internal saphena and its branches. Subsequent to the operation, the patient had an attack of inflammation of the absorbents along the thigh, which soon subsided; but in the progress of the case he had considerable inflammatory reaction, and several of the incisions suppurated. In the second operation, (which was not performed until all the former cuts had closed and the patient was able to walk about,) there were four incisions: three on the internal saphena and its branches, one on the external. In the upper cuts on the former vessel, great masses of varices were exposed and found to be so convoluted and concatenated as to render the isolation of a single convolution less easy than the removal of the mass. No unpleasant symptoms followed this operation. The cure on both limbs was effectual.

In this case the disease had existed since boyhood. The varices were of an enormous size, so much so, especially on the left leg, as to render the limb deformed. He had for years been subject to small indolent ulcers on different parts of his legs, usually in the course of the veins. At the time of the first operation his limb was studded with several small indurated swellings in a state of chronic inflammation, with dark spots in the centre, like the eschars resulting from dry gangrene, and these were seated in the integuments immediately covering varices more tender than the rest, and apparently adhering to the skin. The convolutions at some of the points of incision were so short as to give the veins the spiral and twisted appearance of a cork-screw. The veins in the right leg were much thicker and more numerous and convoluted than in the left. When divided their coats were found to be nearly the eighth of an inch thick, uniformly hypertrophied and free from nodules: their inner coat presenting the appearance of pale and dense muscular fibres running longitudinally; and transverse ridges and depressions extending through both coats as in former cases. The valves of the veins were healthy. The fascia investing the vessels and binding the convolutions to one another, was very thick and strong, and appeared to be the result of long continued chronic inflammation in the cellular investment of the vessels, by which it had been contracted and consolidated.

CASE XIV.—This was a patient with a chronic ulcer in the leg, which had given rise to varices in the course of the limb. The operation for the cure of these was performed as before described, by Dr. Cheesman. The vessels were divided at four different points. In consequence of undue tension of the bandages, it was found necessary to remove them on the third or fourth day. The cure was as rapid and effectual as in the preceding cases.

CASE XV.—Susan Hyde, a negro woman, aged 33, a servant, was sent to me by a medical friend on account of varices on her right leg. The disease had existed five years. In the interval she had had a chronic ulcer on the shin of the same leg, which is now cicatrised; had suffered from an attack of bilious fever, and within the past year, from what was supposed to

be a disease of the liver. But, although somewhat emaciated, she stated that she had recently enjoyed tolerable health. On the 9th of September I had her admitted into the Hospital. After a few days preparatory treatment she appeared to be in a favourable condition for the operation, which was performed on the 15th.

A small ulcerated spot from which the hemorrhage had issued, as she stated, had first become sore about a month before admission, in consequence of a slight blow. It was seated in front of the ankle, on one of the terminal branches of the internal saphena. Just before the hemorrhages occurred she had suffered very acute pain in this part; the pain appeared to extend in the course of the veins all the way up to the thigh, and was followed by a sudden rupture of the vein at the point already mentioned, and the immediate loss of at least a pint of blood. A second hemorrhage occurred in three or four days afterwards, whilst she was in a recumbent position, and was much more profuse than the first. When I first saw her the varices were very numerous, and the veins greatly enlarged; but in consequence of the repose of the limb and the pressure of the bandage, at the time of the operation, they were greatly reduced so that the main trunk of the saphena in the thigh, and its continuation on the inner side of the knee downwards to the ankle, were the only vessels prominent beneath the skin. These to the finger were exceedingly resisting, and appeared to be consolidated. The application of the fillet was unnecessary, except for raising the vein at the lowest incision, and then it was applied around the leg just above this. There were but three incisions made, all of them on the main track of the internal saphena between the knee and ankle. The operation gave rise to scarcely sufficient hemorrhage to stain the instruments. About half an inch of the vein was removed at each incision, the last of which was at two inches above the point of ulceration. The vessels were absolutely empty, very much thickened, the inner coat corrugated as usual, and the calibre so contracted before the division, as scarcely to have admitted the smallest probe.

Sept. 16th. Patient had passed a comfortable night, and was still somewhat under the influence of the anodynes which she had taken subsequent to the operation. Skin warm, pulse 120. The pain in the leg caused by the incisions had nearly subsided. No tension or tenderness either of the foot or of the thigh, above the bandage.

17th. The anodyne taken last night had not procured her much sleep. Her tongue was thickly coated, and rather broad and swollen; pulse 140, small and rather weak. Had recently taken a dose of castor oil, which was still operating. She complains of thirst, and has no desire for food. No tenderness in the limb. She was permitted to drink weak lemonade. To-day for the first time, the starched bandage was applied over the simple roller. During its application she had some chilliness, which was attributed to the cool air from an open window near her, and was very transient. An anodyne was administered at night, consisting, as usual, of the solution of the sulphate of morphia, gr. xxx.

18th. Had passed a watchful night without pain. Her general condition precisely as on the preceding day, except that there was some œdema of the foot, which when pressed was found to be rather tender; she spoke of a slight headache. The frequency of the pulse was the only symptom that appeared to indicate much constitutional excitement. I questioned her closely in respect to her history and previous state of health, but could elicit

nothing further from her than that her last menstrual period had just passed at the time of her admission into the Hospital; and that she had long been habituated to the use of opiates. The tenderness of the foot appeared to be caused by the tightness of the bandage. This was divided for a few inches upwards, and a looser one applied on the part. In the afternoon the patient had a rigor, which was followed by increased tension of the limb. The whole of the bandage was now divided, and a looser one applied. In the afternoon and until bed-time, the nurse informed me the patient appeared to be more comfortable than at any period within the two or three days past; but about midnight she began to moan and appeared to be in considerable pain. About 3 o'clock in the morning, supposing the patient required her assistance, the nurse arose, and to her surprise found her in a state of collapse. The house-surgeon was instantly summoned. He had scarcely time to see the patient, and administer a few tea-spoonfuls of brandy, before she expired.

Post mortem examination, between eight and nine hours after death. The body was rather emaciated; the parietes of the abdomen corrugated as if by utero-gestation. The upper incision of the leg was in process of union by adhesion; but the two lower cuts were gaping and filled with dark fluid blood. The integuments for an inch or two around them, appeared to have been in a state of gangrenous inflammation, the cuticle being detached from the skin. The cellular tissue of the foot was partially infiltrated with serum, and the veins below the last cut were filled with dark fluid blood, and free from coagula. The portion of vein between the two lower cuts, which were perhaps three or four inches apart, was the only part of the venous system that appeared to be at all inflamed, being of a brighter red colour than the fluid blood contained in it; but free from coagulum, and from every thing like fibrinous or purulent deposits. Above the middle incision, the internal saphena vein was empty, and of the same colour as the small sections that were removed during life. There had existed a very large mass of varicose contortions in the saphena major at its upper third. The vein here was also found of a deeper colour than usual, being of a dingy brownish purple; and its inner coat had the muscular appearance so often noticed in other cases during life; but gave no unequivocal evidences of recent inflammation. The inner coat of the vessel throughout was hypertrophied, and could be raised in large strips from the outer coat, to which, however, it adhered rather firmly, and when raised and examined, did not appear vascular. The large veins between this point and the heart gave no evidence of disease whatever, except that they had assumed, probably by inhibition, the precise shade of the dark fluid blood contained in them. The only coagulum found in the veins, was a small mass in the external iliac vein, which did not adhere to the coats of the vessel. The inner lining of all the large veins was perfectly smooth and elastic, and all the valves were healthy.

The heart presented no morbid appearances, with the exception of a fibrinous polypus, which extended from the right ventricle into the pulmonary artery. The upper lobe of both lungs was consolidated, and studded with numerous tuberculous deposits, mostly small. Some of these had degenerated into bone; and some of these bony tubercles were as large as peas; all of them of an irregular shape, and extremely hard. The right lung adhered firmly to the chest. The lower lobes of both lungs were free from tubercles, but were somewhat injected with mucus. In the midst of the tuberculous masses of the left lung there were two small deposits of laudable

pus; in all amounting to about half a tea-spoonful; probably the result of a softening tubercle. There was an old cicatrix on the surface and near the upper extremity of the right lung.

The liver was nearly twice as large as natural, and congested with fluid blood; as were all the large veins in its neighbourhood. The texture of the liver did not appear to be abnormal, either in colour or consistence.

The vagina was filled with a sero-purulent fluid, which issued from it in profusion in the attempt to separate the uterus from it. The uterus itself appeared to be larger and heavier than natural. There was a small fibrous tumour projecting from its fundus. The uterine veins were numerous, dilated, and convoluted, as in ordinary varices. The left ovary was as large as a hen's egg, and had degenerated into numerous cysts, which, when opened on the following day, were found filled, some of them with a transparent yellowish gelatinous fluid, others with what appeared to be grumous blood coagulated. The inner surface of the uterus, when laid open on the following day, was found to have been in a state of inflammation. Its mucous lining was of a bright red colour, extremely vascular; the vascularity greatest at the fundus, and at the openings of the Fallopian tubes; and terminating below, within half an inch of the neck, in a small projecting vascular growth, like an incipient polypus, about as large as a pea. The os tincæ was puckered, fissured, and slightly gaping; and there was an old cicatrix just external to it, round, about a quarter of an inch in diameter, probably the result of a chancre long since healed. No other morbid appearances were detected.

From the foregoing history it is evident that this patient must have concealed some of her symptoms prior to the operation, a circumstance by no means unusual in hospital practice; when, partly from the ignorance and inattention of the patients to their own feelings, and sometimes from a desire to deceive, we are often forced to draw our conclusions, both as to the nature and the causes of disease, rather from what we should expect, than from what we ascertain.

The most striking features of this unfortunate case then are,—a vitiated condition of the general health prior to entering the hospital, consisting in tuberculous deposits in the lungs, probably of long duration; an enlargement of the liver, also of long continuance; an inflammatory disease of the uterus, of recent date. Upon which supervened, after a trifling and almost bloodless operation, obscure febrile movements, characterised principally by a rapid feeble pulse, with heavily coated tongue, wakefulness, anorexia, and slight headache, which, after continuing for three days and a half, were suddenly followed by collapse, terminating in death; the fatal issue probably hastened, if not actually induced, by the formation of a fibrinous concretion in the heart, which must have materially interfered with the circulation through the pulmonary artery. The blood in most of the large vessels was in a fluid state; neither of the wounds had suppurated, and there were no evidences of phlebitis, except in a small portion of the internal saphena between the two lower incisions, which must have prevented the blood in this part of the vein from entering the general circulation.

CASE XVI.—Thomas Donahoe, of Ireland, a labourer, aged 30, was admitted into the N. Y. Hospital, August 30th, 1842, with extensive varices on the left leg and thigh, existing ten years, and a chronic ulcer on the shin existing six years. For the last few years the disease had troubled him so much that he was obliged to remain idle about half the time. He was of a sanguine temperament, had since his youth been subject to frequent attacks of epistaxis, and at the time of admission was somewhat plethoric, but was otherwise apparently healthy.

The saphena major, from the groin downward, was very prominent, about as broad as the patient's thumb, and the whole of its lower third thrown into irregular serpentine convolutions. Below the knee the varices were still more prominent, involving all the branches of the internal saphena, the main trunk of the external saphena, and numerous communicating veins, above and below the patella, as well as on the back of the leg. The whole limb was deformed by them; and the dilatation in the minute veins was such as to produce a general engorgement of the leg, a spongy state of the subcutaneous cellular tissue, and spots of arborescent blotches in the skin. The varices had never given issue to free hemorrhage; but he was subject to frequent extravasation of blood beneath the skin from the slightest bruise. The purplish spots thus produced often occupied the space of several inches square, continuing for two or three weeks, and then gradually disappearing. He had long been in the habit of wearing a roller on the leg, at first with partial benefit, but of late with no advantage.

After admission he was put on spare diet and placed on his back, with a roller applied tightly over the diseased limb, and a saline cathartic was administered. Notwithstanding the continued pressure of the roller, and strict observance of the recumbent posture, the vessels at the day of the operation, September 3rd, were still as prominent as ever, enabling me to operate without the use of the fillet. The veins were divided at five different points; the first above the knee, one in the upper part of the external saphena; all the rest on the internal saphena and its branches, the largest of which ran along the calf of the leg. The incisions were rather freer than usual, and the veins were raised by a thread, instead of the probe, as in former cases. About two inches of the main trunk of the vein were removed at the incision above the knee, and a large mass of convolutions, intimately interlaced, from the inner and upper part of the leg. No bleeding of any account occurred until after completing the last two exsections in the upper part of the leg and above the knee; but before applying the straps and compresses here the patient lost perhaps more than a pint of blood.

The points of interest observed in connection with the operation and examination of the portions of the veins removed, were—

1st. That the coats of the enlarged veins were not of equal thickness at the different points of incision, and that the thickening bore no relation to the degree of dilatation. Thus, the vessels in the thigh, enormously dilated, were but slightly hypertrophied; the thickness of its parietes was trifling in comparison to that of the large branches of the internal saphena below the knee.

2d. That the points at which the convolutions were the most numerous and agglomerated, were the points at which the greatest degree of hypertrophy existed in the coats of the veins.

3d. That the thickening at each point in the course of the vein was regular on all sides, and free from the small nodules of lymph or cartilage, as well as from small irregular thin pouches in the coats of the vessel, as witnessed in former cases, especially in such as had given issue to several hemorrhagies.

4th. The anatomical changes in the two coats were, as observed in other cases. The inner coat was marked by fleshy looking longitudinal fibres, and mottled at the various points of anastomosis with small purplish spots, as if by extravasation of blood between the two coats. The outer coat had the appearance of a thick and uniform layer of semi-diaphanous cartilage. The cellular investment beyond this was dense, and bound the vessels closely to the fascia and looser cellular tissue surrounding them.

5th. A fact worthy of remark was the very great contractile power of the vessels when freed from the cellular envelopes by which they were held in a state of dilatation. Thus, the saphena major, before exposing it, appeared to be nearly an inch in diameter; and, when exposed, and before it was separated from the surrounding tissues, its diameter was still the same. But after isolating it from these, and before it was divided, the isolated portion contracted so much as to lead me to suspect that I had fallen upon a small collateral vessel; it was not more than one-fourth its former size, if indeed so much. The same fact was observed in the lower branches; but owing to the greater thickness of the parietes of these, the degree of contraction after isolating them was by no means so great as in the saphena major.

6th. The subcutaneous extravasations, that had been of frequent occurrence, must have issued from venules too minute to be secured, as these vessels, in numerous patches, were very much dilated without any apparent increase in the thickness of their parietes.

About three hours after the operation the starched bandage was applied, without any instructions from me to that effect, the usual practice having been to apply this on the day following the operation, after having allowed sufficient time for swelling. In the evening I found the patient complaining of pain over the tibia. He had already taken a full anodyne; another was ordered and instructions given for dividing the bandage if the pain continued.

Sept. 4th. The patient had been in pain all night, and had slept little or none. Early in the morning he became sick at his stomach and vomited. The house-surgeon now slit the bandages over the seat of pain. At 8 o'clock A. M. I found him comparatively free from pain but with a rigor upon him. There was some tenderness at the left groin, which he attributed to the effort at vomiting. The lymphatic glands here were evidently enlarged, without any corresponding tenderness or swelling along the thigh. There appeared to be a distended vein under the integument at the point of the leg where the bandages had been cut, and the skin over them was slightly chafed. Another anodyne of solution of sulphate of morphia (gtt. xxx.) was administered, to be followed with spirit. minderer. \mathfrak{z} ss. every second hour. At 2 o'clock, P. M. the patient was free from pain and disposed to sleep, pulse 80, tongue moist and clean. At 8 o'clock, P. M. he had taken another anodyne of half the former strength, and had continued the use of the diaphoretic. He had been free from pain all day, with his skin moist and

natural. He had an attack of epistaxis, but no return of nausea or vomiting. I found him asleep, with pulse at 100. A blister that had been applied in the morning over the enlarged glands at the groin, had drawn well. The chafed spot on the leg was now rather swollen and injected, but the enlarged vein had disappeared.

5th. The patient had slept well. In the morning had a cathartic of castor oil which operated freely. In the evening had a rigor which soon subsided. The circulation was free in the limb, he had no pain, but a small circumscribed swelling, like an enlarged lymphatic gland, had appeared on the track of the saphena at the middle of the thigh. A small blister was applied over this, and the other treatment continued. Hitherto, although with little relish, he had taken his regular meals, which were of the simplest kind.

6th. Had slept as usual, and was free from pain; pulse about 100, tongue clean; still on the anodyne and diaphoretic treatment. In the course of the day he had sickness of stomach and occasional vomiting after eating, or after the effervescing draught which had been substituted for the spirit. minderer. At night he had another rigor, which was slight, and followed by no excitement. No tenderness or unusual swelling in the limb. The tenderness and swelling in the lymphatic glands had been relieved by the blisters.

7th. He had vomited once or twice in the early part of the night, but rested as usual. Disposed to wander in his sleep, but intellect clear at other times; pulse 102.

9th. General condition as at last report. The bandages were partly removed. Over the tuberosity of the tibia, owing to irregular pressure, a small slough had taken place, and at the seat of the old and partly cicatrised ulcer on the shin the integuments had also given way, leaving a sore larger than the original one.

10th. The rest of the bandages removed. All the cuts, except one near the calf of the leg, were quite dry, and in process of healing. From this one there was a healthy purulent discharge. Simple dressings to the sores, dry lint to the cuts, and a many-tailed bandage over the whole.

12th. General condition gradually improving. No pain except at the calf of the leg where the adhesive straps exert an irregular pressure. The integuments here are inflamed, and a small abscess is about to form below the suppurating cut. The patient rests well, has no further irritability of stomach, and very little general excitement. A poultice was applied to the leg. The anodyne and diaphoretic course was still continued.

14th. A small abscess that had formed in the back part of the leg was opened; the foot and lower part of the leg for a day or two had been somewhat œdematous. He has little or no appetite, and is "romancing in his sleep." His skin is moist, and his pulse about 90, less full than formerly; and his tongue is heavily coated.

15th. Less inflammation, but more œdema in the limb. Pulse 88, soft and feeble; tongue moist and less heavily coated; romancing while asleep; skin moist and flaccid; slight emaciation. Patient has no pain, but speaks of inability to move the right leg. Simple dressings and a roller were substituted for the poultice, and the patient was put on the use of bitter infusion, with a more generous diet.

16th. Patient has eaten with more relish, has slept well, is free from pain, and speaks of soon being able to get about.

17th. General condition as at last report, but in the course of the day he

took a dose of castor oil which sickened him, and in the evening the nausea and vomiting returned.

18th. I had not an opportunity of seeing him. The nausea and disposition to vomit continued unchecked either by anodynes or the effervescing mixture.

19th. A pulse at 120 and very small, countenance anxious, skin bathed in perspiration, stomach still irritable. He spoke of severe pain in his hips. The discharge from the leg was rather free. He could not turn in bed without assistance. A sinapism was placed over his stomach, and he was put on the use of sulphate of quinine, about three grains daily, with wine whey, broth, and beef tea, as much as he was disposed to take.

20th. Stomach quiet since the application of the sinapism; tongue dry and brown. The ulceration over the shin has extended and left a part of the tibia bare.

21st. Increased prostration, and increased pain in the hips. This morning I observed the first joint of his right index finger much swollen and the integuments red, evincing the formation of what I supposed to be a secondary abscess. He attributed this to the habit of keeping the hand under his head while asleep. In the evening his tongue was dry and almost black, and he had slight subsultus, with muttering delirium during sleep; pulse still more frequent. He was put on brandy toddy.

22d. Had taken nearly half a pint of brandy during the night. Prostration in the morning less marked. The conjunctiva of the right eye engorged with blood. The stimulants were continued freely during the day, but towards night he began to sink rapidly, and he died about half past 7 o'clock, P. M.; rather more than nineteen days after the operation.

Autopsic examination, 20 hours after death. Some of the cuts made during the operation had cicatrised; the others were all far advanced in the process of healing. There were two small openings that had been made for the discharge of matter, near the calf of the leg, communicating with an abscess there that contained a few ounces of purulent matter. With the exception of a small part of the saphena major, all the veins of the limb, as well as those in every other part of the body, appeared to be free from inflammation; few or none of them even presenting the reddened appearance of their coats, so frequently the result of imbibition. The saphena major, for about five inches and a half above the uppermost incision, was thickened and adhering by lymphatic effusion to the surrounding tissues. It was discoloured internally, and blocked up with adherent and partially organised bloody lymph. But these morbid appearances terminated abruptly above, and were arrested here by an intervening valve. This valve itself was healthy, as were all the others above it.

A small bloody and fibrinous coagulum was found extending from the right ventricle of the heart into the pulmonary artery. The heart in other respects presented no abnormal appearances. The lungs and the abdominal viscera were healthy.

The principal seat of disease had evidently been the lymphatic system. The absorbent vessels running in vast numbers along the inner side of the thigh were thickened, consolidated, and opaque; in size and firmness resembling minute cords of catgut. The lymphatic glands were equally diseased. One of these, at the middle of the thigh, lay immediately upon the saphena vein, to which it adhered by firm fibrinous attachments. It was about an inch and a half long, oval, firm, and had numerous enlarged and

at the groin, both superficial and deep-seated, were also enlarged, indurated, and agglomerated. The disease in the absorbents and lymphatic glands above this part had probably given rise to the most striking lesion in the consolidated absorbent vessels entering it from below, imbedded in condensed cellular tissue, and others extending from it upward. The lymphatic glands body, and one which elucidated many of the symptoms that occurred in the progress of the case.

This consisted in an immense abscess extending in the course of the left psoas muscle, external to the iliac fascia, from the diaphragm to the groin, and passing at the groin under Poupart's ligament, on the inner side of the vessels, downwards on the thigh, where it was arrested by the pectineus and adductor muscles. The whole of the pelvic surface of the os ilium, as well as the portion of the os pubis forming the floor of this abscess, was exposed, bathed in purulent matter, but smooth and free from disease. The muscles lying in the course of the abscess, viz., the psoas, pectineus, and adductor femoris, were discoloured, softened, and approaching to a state of decomposition. The abscess, at its upper part, advanced close upon the vertebral column without actually reaching it. The vertebræ, so far as I could detect, were healthy.

There was a large concomitant vein running nearly parallel with the saphena major in front of the thigh, with numerous branches extending externally and downwards. It anastomosed with the saphena, first, just above the valve by which the adhesive inflammation had been arrested, and again just before its entrance into the femoral vein at the groin. This concomitant branch was about one-fourth the size of the saphena major, and nearly, if not quite as large as the saphena itself, as seen in some subjects. It was healthy, but contained blood partially coagulated, as did also the deeper veins in the limb, and the large veins in other parts of the body. This vessel had probably enlarged subsequent to the operation, and must have been of material assistance to the deeper veins, in returning the blood from the limb.

The details of this unfortunate case, which, towards its close, was looked upon as one of erratic phlebitis, throw much light upon some of the symptoms that follow operations upon varices, and serve to show that other circumstances, equally as important as phlebitic inflammation, must hereafter be taken into account in determining the propriety of any operation upon the veins. The fatal issue was evidently induced by inflammation of the absorbents, and not by phlebitis.

The signs in the early part of the case, which subsided after the loosening of the bandage, were probably owing to the extension of irritation in the course of the absorbent vessels, as indicated by the swelling and tenderness at the groin, and by the enlarged lymphatic glands in the middle of the thigh. It is difficult to say how far this irritation was the result of the irregular and painful pressure of the bandage on the leg, or how far the direct effect of a division of the absorbent vessels themselves during the operation. The subsidence of most of the constitutional symptoms for a few days before the close of the second week, shows that the inflammation of these vessels could not, at that period, have progressed above the groin. But the loss of power in the limb, the inability of the patient to turn himself in bed, the severe pain in the hips, the recurrence of rigors and sickness of stomach, the dry and

heavily-coated tongue, the emaciation, and the rapid and feeble pulse, all of which came on rather suddenly about the close of the fifteenth day, may be looked upon as indicating, at this period, a rapid extension of inflammation in the course of the absorbents, to the loose cellular tissue of the left lumbar region, eventually terminating in the recent abscess, which exhausted the patient, and was the immediate cause of death.

Before closing these observations on individual cases, I may remark that they constitute only the severer instances of varices that have fallen under my notice, and that, during their occurrence, I have had the management of numerous other cases. Some of these were the result of local injury, some of chronic ulcers, some accompanied tumours both simple and malignant, and some appeared to depend not so much upon an undue determination of blood to the lower extremities, from disease, severe labour, or the long observance of the erect position, as upon a natural laxity of fibre, either in the coats of the veins themselves, or in the tissues surrounding them. In several instances of this last class, the varices were less marked in the larger veins than in those of smaller calibre. They were nearly all observed in females of lymphatic temperament, with superabundance of fat in the limbs; one of them, however, was a youth of twenty years of age. These cases were mostly treated with the roller and by keeping the limbs elevated. In a few, I pencilled the integument over the veins with tincture of iodine, but with no appreciable advantage. I shall close the report of cases with the following:

CASE XVII.—A coloured woman, aged 28, had for eight years suffered from a varicose swelling on the saphena major, just below the knee, which she stated to have been produced by an inflammation at the upper part of the leg, caused by resting on her knees in scrubbing. For six years the varicose swelling appeared to remain stationary; but some time since, after having placed her feet in cold water, she was suddenly affected with severe pain and stiffness of the limb, and ever since the varices have been increasing. They now involve numerous branches of the saphena major on the leg, and extend round either ankle to the foot. She is subject to occasional attacks, during which the pain and turgescence of the limb are almost unsufferable. During these attacks she has been in the habit of puncturing the veins with a needle, in order to unload them. She has in this way often drawn half a pint of blood, or more, at a time. She has occasionally employed the common roller as a palliative, but from soon slipping and falling into irregular folds, it has given her so much uneasiness, that she can no longer resort to it. She was desirous of submitting to an operation for relief. From this, after the ill success above stated, I considered it my duty to dissuade her. I therefore resorted to another expedient. Requesting her to keep her bed for twenty-four hours with a common roller on the limb, in order to overcome the swelling, on the following day I applied several small portions of a common wax bougie, some longitudinally, others transversely, along the limb, over the course of the varices; I secured them in these situations, and then enveloped the limb in a starched bandage. On the succeeding day she was walking about; the bandage gave her no uneasiness except in ascending a flight of stairs. At the end of two weeks the dressings were still undisturbed. The patient ex-

periences no inconvenience from the varices, but it is too soon yet to anticipate the permanent result of the experiment.

Part Second. I. Pathology.—The term varix has been employed in a manner altogether too indefinite. By some writers it is applied to a sort of thrombus or pouching tumour in the walls of a dilated vein, holding the same relation to the vein as an aneurism to an artery.* Others, using it in this sense, apply it also to varicose tumours formed by an agglomeration of convolutions, either in a single dilated vein, or in a congeries of veins intimately entangled.† The true import of the term, as used by the ancients and others, is still more comprehensive. A varix, according to Galen,‡ is a vein tumefied or dilated with blood. In this sense it is also used by Paulus Ægineta,§ Paré,|| J. Cloquet,¶ and others. It may be defined to be a vein morbidly dilated, and usually elongated, convoluted, and nodulated.

II. Seat of Varices.—Varices may occur in almost any part of the body. They have been observed on the head, on the arm; in the jugular veins, the subclavian, the vena cava, the azygos, the intercostal veins, the veins of the abdomen and pelvis, and the veins of the thoracic and abdominal parietes. They are most frequent in those parts of the body from which the blood returns with greatest difficulty to the heart, as in the superficial veins of the lower extremities, the spermatic, the hemorrhoidal veins.

On the head and face the disease is of rare occurrence. I have seen it on the lips, and in one instance in the minute veins of the conjunctiva. In this case the vessel ruptured spontaneously, and produced a diffuse ecchymosis. As a secondary affection, it is occasionally seen here among the results of chronic ophthalmia. The morbid growth on the conjunctiva, called pterygium, in some instances is evidently the result of a varicose enlargement of the veins of this membrane. According to Ætius,** the disease may

* Hodgson (on the Arteries and Veins, p. 538,) says, "A small portion of a vein is occasionally more dilated than the rest, and forms a prominent tumour, which is denominated a varix." On the same subject M. Monfalcon (Dictionnaire des Sci. Méd.) says, "elles sont à ces vaisseaux ce qu'est aux artères l'anévrisme qu'on appelle *vrai*."

† "Varix, κίχρη. Tumeur formée par la dilatation plus ou moins considérable et permanente des veines." Bégyn, (Dictionnaire de Méd. et de Chirurg. Prac.) Mr. S. Cooper gives the word this sense in his definition of it, whilst in his article on varicose veins, he gives it the more liberal application.

‡ As given by Fætiſ, (Œconomia Hippocratis, appended to his Latin version of Hippocrates); also by himself, "varices venæ dilatatæ sunt."—(Epitome Galeni Operum, fol. Lugduni, 1643, p. 459.)

§ As adopted by Fabricius ab Aquapendente.

|| The small tumours, by some modern writers called varices, Paré distinctly characterises under the name of Thrombus. (Les Œuvres d'Ambrose Paré, fol. Paris, 1579, p. 484.)

¶ Dictionnaire de Médecine.

** As stated by the translator of Hippocrates.

occur upon the eyelids; others have noticed it on the temples. Alibert* has found almost every vein of the head affected with varices. Portal* has discovered varices in the meningeal veins of the head; and, according to Monfalcon,* they occur in the vessels of the pharynx and upper part of the œsophagus, and bursting here, give rise to extensive hemorrhage.

In the veins of the arm, varices, as a primitive affection, are exceedingly rare. In a case recorded by J. L. Petit,* the disease occurred at the flexure of the arm. The patient was fat, and no other vein being apparent, M. Petit, wishing to bleed the patient, was obliged to puncture the varix with a lancet. M. Roux† saw a case under the care of Sir A. Cooper, in which the superficial veins of the fore-arm were immensely distended. As a secondary affection, however, varices are as frequent on the arm as on other parts. I have seen them here in connection with malignant tumours. Monfalcon quotes a case from M. Cartier, in which all the superficial veins of the upper extremity were affected. The disease was congenital, but increased with the growth of the patient. At the age of twelve, "the varices were separated from one another by considerable depressions; the skin was bluish and livid, in a word, the arm and fore-arm appeared to be full of nodosities." This, I suspect, was an instance of aneurism by anastomosis, a disease in its origin very different from the one under consideration, but which, as is well known, may extend in the course of the large vessels, and in the end produce all the appearances of simple varices. Aneurismal varix, or that variety of the disease which is produced by the passage of arterial blood from its proper vessel, through an unnatural opening into a vein, is of more frequent occurrence on the upper extremity than on any other part of the body, owing to the fact that the operation of venesection is now almost exclusively performed on the vessels of this part.

In the veins of the neck the disease has been observed by Morand,‡ Cline,§ Portal,|| and M. Roux.¶ Cases similar to that recorded by Morand are not unfrequently the result of obstructed circulation through the heart. The jugular veins in this instance were of the thickness of a man's thumb. The woman had suffered from palpitation, faintings, and continual pulsation in the jugular veins—"The right auricle of the heart was almost filled with a polypous concretion, the branches of which reached through the neighbouring veins quite to the jugular." In Mr. Cline's case, the patient was also a female, who had a large pulsating tumour in the neck, which burst, and proved fatal by hemorrhage. "A sack proceeded from the internal jugular

* Dictionnaire des Sciences Médicales.

† Medico-Chirurgical Review for July, 1832, p. 184. From Journal Hebdom.

‡ As quoted by Morgagni, Letter xviii, article 9.

§ Hodgson. Treatise on the Arteries and Veins, p. 539.

|| Dictionnaire des Sci. Méd.

¶ Medico-Chirurgical Review for July, 1832, vol. xvii., new series, p. 184.

vein; the carotid artery was lodged in a groove at the posterior part of the neck."

"A man, aged 23, entered the Hôpital de la Charité under the care of M. Roux. There was a tumour situated immediately above the clavicle, of the size of a pigeon's egg, which was at first supposed to be an encysted tumour; it was firm, elastic, and did not pulsate. The patient had noticed it for about two years, but it was only within the last two months that it had given him any annoyance. Its true nature was not ascertained before the operation; when cut into, a quantity of coagulated black blood flowed out." The swelling was now discovered to be formed by the dilatation of a venous branch communicating between the two jugulars. We are not told which jugulars, probably the deep and superficial of the same side. M. Roux put a ligature round it, and also around several thoracic branches. Fortunately the wound healed perfectly in a fortnight."

Varices in the subclavian vein are extremely rare. M. Hodgson and others refer to a case of this recorded by Portal: the dilatation was excessive in the right subclavian vein, and terminated fatally by bursting into the cavity of the chest.

In the veins of the thorax varices have been observed by several authors. Morgagni,* on the authority of other writers, refers to several cases of varices of the vena cava, and other large veins attached to, or in the immediate neighbourhood of the heart, and gives the particulars of a case from Manfredi, of a varix of the vena azygos, which ruptured and terminated fatally. 'The vein, though contracted by the effusion, "had retained so much of its breadth, that it might be well compared to the vena cava. This dilatation had extended itself to about the length of a span, and about the middle of that length a foramen lay open, in the form of an ellipsis." Portal† has recorded three instances of this same condition of the vena azygos. In one of these the disease had also extended to the inferior intercostal veins, one of which was open.

In the veins of the abdominal and pelvic viscera, varices occasionally occur. Internal abdominal hemorrhages, according to Monfalcon, are frequently caused by the rupture of varices. In one of the preceding cases I have noticed a varicose condition of the veins of the uterus and its appendages. An instance occurred to M. Cruveilhier,‡ in which a varicose condition of the veins of the round ligament was found in connection with a strangulated hernia: the nature of the disease was made evident after the operation. The internal surface of the bladder is sometimes affected with varices, which rupture and give rise to hæmaturia; but the veins in the neighbourhood of this organ most frequently affected, are those that surround the prostate gland. In a

* Letter xxvi, articles 28 and 29.

† Monfalcon. Dictionnaire des Sci. Méd.

‡ Medico-Chirurgical Review, vol. viii., new series, p. 543.

patient who had suffered from a tumour of the *luette vésicale*, which had given rise to hypertrophy of the bladder, to calculous deposits, disease of the kidneys, &c., I found some of the plexuses of veins around the neck of the bladder and base of the prostate gland larger than ordinary goose quills. The vagina and vulva are occasionally the seat of varices. During parturition they are exposed to injury, and when ruptured, may lead to fatal hemorrhage. Cases of this sort have been recorded by Dr. Elsasser and others.* The veins of the urethra are sometimes affected in the same way, giving rise to symptoms analogous to those of stricture, and on the introduction of catheters or bougies, giving rise to profuse and alarming hemorrhage. Such, I have reason to believe, was the fact in the following case:

Mr. C., a Smyrnes, aged 40, had long suffered from a slight obstruction in the urethra, which was supposed to be an ordinary stricture. A few slight applications of lunar caustic had been made with apparent benefit. On the 26th of March, 1842, the caustic was applied with as much caution as usual at the supposed seat of stricture, between five and six inches from the meatus urinarius. The amount of caustic dissolved was scarcely appreciable. The patient experienced no unusual symptoms until Sunday night, March 27th, about thirty-two or thirty-three hours after the introduction of the instrument. But feeling a disposition at this time to evacuate his bladder, he arose from bed, and, after some effort, began to evacuate clotted blood. During the night he was frequently aroused to repeat the same procedure, so that before the morning he passed nearly a chamber-potful of this clotted blood, mixed with fluid blood and urine. The discharge recurred about once an hour until the afternoon of the 28th, at which time I first saw him. He was pale, cold, agitated, and frequently shivering. He complained of throbbing in his head, and sighed frequently and deeply. His pulse was weak, disposed to intermit, and ranging at sixty in a minute. His physician had administered rhatania extract internally, and had applied cold wet cloths to the perineum. The patient informed me that he could continually feel the blood, as he lay on his back, dropping, as he expressed himself, "*goutte par goutte*" against the *bas fond* of the bladder. A solution of acetate of lead, fifteen grains to the ounce of water, was thrown into the urethra through a silver canula, previously introduced about four inches and a half into the passage. After injecting about four ounces of the solution into the bladder, and withdrawing the instrument, a compress was applied to the posterior part of the perineum, and directions were given, in case the hemorrhage returned, to introduce a tampon of ice into the rectum. The patient had no evacuation of the bladder for several hours afterwards. About midnight he again voided a small quantity of clotted blood and urine; the tampon of ice was then introduced. On the following morning he voided healthy urine, free from blood. He had no subsequent return of the hemorrhage.

In the veins of the thoracic and abdominal parietes.—On the chest and upper part of the body varices are rarely observed, except as the effect of tumours and of carcinomatous diseases. In their simpler form they are not unfrequent on the walls of the abdomen. In one of the foregoing cases there existed a varix of considerable size in the superficial epigastric vein.

* American Journ. Med. Sci. vol. xvi. p. 233—234.

Varicose tumours of immense size sometimes form on the lower part of the abdomen, especially in women who have borne several children, cases of which have been recorded by Severinus,* Boyer,† Bordeu,‡ and other writers.§ I have observed extensive varices on this part of the body in connection with ovarian tumours; and on the hips and loins, in connection with bony tumours.

In the hemorrhoidal and spermatic veins.—These vessels, next to those of the lower extremities, are the most frequent seat of varices. In the veins of the rectum and anus, the disease receives the specific name of the piles, or hemorrhoids, and is of too much importance, and attended with too many peculiarities, both in a pathological and therapeutical point of view, to be spoken of incidentally. It may, perhaps, be the subject of a future essay. The same remark will apply, but not so forcibly, to the disease in the veins of the testicle and spermatic cord, where it constitutes varicocele, or, as it is still occasionally, and more properly called, cirsocele.

In the veins of the lower extremity.—This part of the body is beyond all comparison the most frequent seat of varices. The main object of the cases reported at the commencement, is to illustrate the disease as it affects this part. Leaving then the history of varices as they occur in other parts of the body, we have now to speak of them in the vessels of the leg and thigh.

III. *Stages in the progress of varices.*—When this disease in the veins of the lower extremity is the result of local injury, or of any morbid influence acting directly on the limb, the varicose enlargements usually appear first in the neighbourhood of the affected part, or in the vessels that receive the blood directly from it. But they most frequently commence just below the inner side of the knee, and again in the vessels ramifying through the loose cellular tissue just above the heel, on either side of the tendo Achillis. The great saphena and its branches are more frequently affected than the saphena minor, owing to the shorter course and peculiar termination of the latter. The deeper vessels are but rarely involved. They are not, however, exempt. In the autopsic examination of Case XVI., I observed a very extensive varix behind the knee, in one of the deep veins, just before its entrance into the femoral.

The changes produced in the vessels by the progress of the disease are, first, simple dilatation, which, though it may result from mere physical distension, soon leads to a proper interstitial development, in the same way that morbid, and even healthy developments, are sometimes effected in other organs, as in hypertrophy of the muscles by healthy exercise of them; hypertrophy of the heart, by mechanical distension and over-action; morbid development of the bones of the head and face, and of the soft parts connected

* De Recondita Abscessuum Natura, Cap. ix., § 13.

† Maladies Chirurg., tome ii., p. 359.

‡ Monfalcon. Dict. des Sci. Méd.

§ Medico-Chirurgical Review, vol. xix., p. 213.

with them in some cases of chronic hydrocephalus, and from tumours in their neighbourhood.

The next important change is an increase of length. This is in a still more marked degree the result of interstitial growth, and not of physical distension. As the vessel grows in length, it falls into folds and serpentine convolutions, and these occur most readily at points within which the vessel is under least restraint from fascias or dense cellular tissues, or other resisting envelopes. The walls of the vein about this period occasionally yield irregularly to the pressure of the blood, and form the small pouches which some have compared to aneurisms, and to which Paré gives the name of thrombus. These several irregularities in the shape and course of the vessel, at first appear to be easily effaced; they disappear under certain movements of the limb; but by degrees they become fixed. The vessel contracts intimate adhesions to the surrounding tissues, which in their turn take on a diseased action, and become condensed into firm bands, extending from one fold or convolution of the vein to another, holding the vessel in its irregular shape, preventing it from exercising its proper elastic force for diminishing its calibre, and as the folds and convolutions at a particular point increase, binding them into one mass in the form of a varicose tumour. At this stage of the disease, by forcing the blood from the vessels, they may be made to collapse, so as to be no longer visible externally. A few days' repose, or the pressure of a bandage, may so far relieve the varices, as to lead us for a time to suppose that they have been entirely obliterated. The mistake, however, is corrected as soon as the pressure is removed, and the blood is allowed to descend into the limb.

The next stage in the progress of the disease is an increase of thickness in the elastic coat of the vessel. This, in its healthy state, is always delicate, and never so firm as to prevent the vein from collapsing when deprived of blood. But in the progress of morbid development, it may become, even in the terminal branches of the saphena, thicker and firmer than the corresponding coat in the largest arteries. When examined under these circumstances, it is found to have a pale bluish, grayish, or sometimes yellowish-white appearance, a cartilaginous hardness, and considerable contractile force. The cellular tissue surrounding it is also consolidated, sometimes nearly as firm and compact as the elastic coat itself. In some cases, especially in the early stages, the hypertrophy is uniform in the whole circumference of the vessel, though never so throughout its whole extent, being generally greatest at the point where the varix first appeared, or where it has been subjected to the greatest irritation. But in other cases, especially where the convolutions are short, numerous, or intimately involved, the elastic coat is thrown into nodules, and transverse prominences and depressions; the prominent points on the inner face of the vessel being usually the seat of nodules, or of an undue degree of hypertrophy, whilst at the depression on the opposite part of the vessel the parietes may be but little, if any, thicker than natural.

Sometimes these nodules are so numerous in the course of the vessel, when felt beneath the skin, as to give a sensation similar to what might be produced by a chaplet of beads, or by a hard knotted cord. This feeling, however, is no evidence that the calibre of the vessel has been obliterated or obstructed with fibrinous coagula. Pressure, the horizontal position, or any other mode of emptying the vessels, may at this stage diminish the size of the varices, but will not even temporarily obliterate them.

The inner coat appears to be the last to suffer. This at first is found smooth, shining, and diaphanous; at a later period it is thrown into reticulated depressions, and afterwards into minute longitudinal folds, giving it, with the reddish tinge which it has now acquired, the appearance of delicate muscular tissue. At this stage, though the inner membrane adheres closely to the elastic coat, and follows it through all its transverse ridges and depressions, it may, nevertheless, readily be torn in large patches from the latter, and these patches, when thus removed, show the membrane to have been thickened; the longitudinal folds disappear, the reddish tinge continues, but no vessels are visible in its texture to the naked eye.

In varices resulting from tumours and inalignant growths, the coats of the veins are rarely or never thickened as above described, but are subject to the diseases of the surrounding tissues, and when inflamed, the blood coagulates within them, and may in this way prevent the loss of blood, on the supervision of ulceration or sloughing. More frequently, however, their parietes give way before the blood coagulates, causing copious hemorrhage, which continues to recur as the disease progresses, and is the immediate cause of anasarous swellings, sinking of the vital powers, and finally of death. But the coagulation of blood in ordinary varices is a rare occurrence. I have never had occasion to witness it independent of inflammation. As a result of inflammation, however, it is as likely to occur in varicose veins as in any other. Cases of spontaneous phlebitis supervening on varices, and terminating fatally, are reported by Mr. Lawrence and others. The strings and shreds of coagulable lymph mentioned by some writers as occurring in varicose veins, I have never witnessed on first opening into these vessels. In the autopsic examination of Case XVI. I noticed them, but only in the parts of the vein from which the circulation had been previously intercepted by the operation, and which were already in the process of obliteration. In short, the spontaneous closure of varices, independent of acute phlebitis, is rarely or never noticed. The knotted and cord-like character of the vessel, when felt beneath the skin, even if accompanied with a marked diminution of size, or following a previous state of unusual swelling and excitation, is not to be taken as proof of the closure of the vein. In Case XV. all these circumstances were observed before the operation, and in some of the vessels afterwards; but in the autopsic examination the diseased veins were found pervious, and most of them apparently as much dilated as they had ever been.

Varices accompanying ossific and osteo-sarcomatous tumours, are some-

times found imbedded in grooves upon the surface of these tumours. Mr. Hodgson states that similar grooves are sometimes found on the surfaces of healthy bone in cases of ordinary varices. This I have not witnessed; but the induration of the tissues on either side of a varix, may give the finger when pressed upon the vessel, a sensation similar to what might be produced by a depression in the bone.

IV. *Complications.*—Often before the walls of the veins take in the state of hypertrophy above described, the languid circulation and increasing turgescence in the capillaries, lead to swelling of the limb. The skin and subjacent tissues are engorged with venous blood, infiltrated with serum, or consolidated with lymph. Ulcerations difficult to heal break out spontaneously, or after the slightest injury, around the ankles or lower part of the leg; or pruriginous eruptions in the form of lichen, or chronic eczema, attack the flexures of the joints, the natural folds of the skin, or those parts of the limb upon which the varices are most troublesome. The cellular tissue is occasionally the seat of small indolent swellings that rarely suppurate, but occasionally take on gangrenous inflammation. These form immediately over varices, to which they adhere; and which, indeed, give rise to them. They usually bind the diseased vessel to the skin, and after ulcerating or sloughing, give rise to sudden hemorrhage. The subcutaneous tissues are also occasionally the seat of sanguineous effusions, sometimes from the minute vessels, at other times from those of greater size, occurring either spontaneously or after trifling injuries. The varices themselves, already in a state of excitation, are peculiarly subject to sudden attacks of erethism bordering on subacute inflammation. This in turn leads to extension of the disease to vessels not previously affected, or to its more rapid development in those that have already suffered; or it induces ulceration in their coats which sooner or later progresses to the surface, and gives rise to sudden hemorrhage. Finally, acute suppurative phlebitis may supervene spontaneously in the progress of varices, and lead to fatal consequences; as in a case of Mr. Lawrence's, reported in the *Lancet*, (Jan. 20th, 1827, p. 527.) and in others, reported in the same journal, (Sep. 10th, 1825, p. 305.) from the *Archives G n rales*.

Among these various complications the ulcers are the most frequent; and if not the most dangerous, are at least among the most troublesome. Of these there are three kinds: first, the ordinary indolent ulcer, occurring about the ankles and lower part of the leg, indeterminate as to size and form, but always obstinate. Independent of its connection with varices, and of its intractable nature, it has no characteristics to distinguish it from other ordinary ulcers. The second form is a minute perforating ulcer not much larger than the head of a pin, never larger than a pea, and is produced by the extension of ulcerative action from the vein outward. It is surrounded with little or no swelling or induration: it gives rise to hemorrhage which may

recur a few times before the ulcer closes. Finally, it cicatrises, and is not likely to reappear. The third form is also small, occurring in the centre of one of the small indolent tumours already noticed, either after an abrasion of this, or after the separation of a slough. It gives exit to hemorrhage, as in the second form; heals up spontaneously soon afterwards; but is likely to reappear during intervals of excitement in the vein beneath it, or after injury.

It has been remarked, perhaps correctly, that the loss of blood from varices, when moderate, has not the same prostrating effects as other hemorrhages. The blood in these vessels is habitually in excess, and the whole system often in a state of plethora, as indicated by attacks of epistaxis and hemorrhage from organs remote from the diseased veins. The function of sanguification appears to be exalted either to supply the loss caused by frequent bleedings from the varices, or to repair the deficiency in the rest of the body caused by the recession of blood to the dilated veins, in which it remains shut off, as it were, from the general circulation. This plethoric condition is strongly shown in those cases in which the simple application of a roller to the limb, or any other measure calculated to force the blood out of the varices into the general circulation, has led to congestion or inflammation of distant organs, to hæmatemesis, diseases of the lungs, and other alarming consequences. Madame Boivin, says Velpeau,* cites the case of a girl who when pregnant, could bring on an abortion at any time, by bandaging her legs, which were varicose. Mr. Freer's case, reported by Mr. Hodgson,† in which a ligature applied to the saphena vein gave rise, within four hours afterwards, to violent pain in the left side of the chest, quick and laborious respiration, inability to speak, and at length to vomiting of blood; and in which the alarming symptoms subsided on the removal of the ligature; and reappeared on repeating the operation several weeks afterwards;—is evidently another striking example of the same sort.

V. *Causes.*—Without entering minutely into the special causes of varices, we may remark that they most frequently occur during the middle periods of life, and almost invariably after the age of puberty, in persons of both sexes habituated to severe labour, or protracted exercise on foot; or who have suffered from other affections determining an undue quantity of blood to the lower extremities, or preventing the blood already there from returning freely to the heart.

In reference to their causes, then, varices are either primary or secondary. The first occur in persons of lax fibre, of lymphatic or sanguineous temperament; the coats of whose veins are naturally delicate, who have a superabundance of fat in the limbs, whose superficial veins lie loose in the midst of soft cellular tissue, free from the restraint of sheaths or dense surrounding

* *Médecine Opératoire*, tome 2d, p. 262. Paris, 1839.

† *Treatise on the arteries and veins*, p. 551.

textures. The second may result from chronic ulcers, from cutaneous eruptions, morbid growths, local injuries, spontaneous inflammation, or they may occur after long confinement to the recumbent position, or in the train of other diseases, especially of the abdomen; as in disorders of the portal system, ovarian and other tumours, the gravid uterus; and, as some believe, from obliteration of the larger veins. It should be remarked, however, that mere mechanical obstruction is never of itself sufficient to give rise to varices. The blood when impeded in its course through its natural channels, is almost immediately diverted into others, so that obstructions of this sort, instead of producing varices, are, in fact, among the most efficacious means of curing them.

Mr. Hodgson has intimated that varices may be the result of rupture of the valves of the veins; and Sir Everard Home thinks that in varices the valves are thickened and contracted. I am not aware of any facts on record to establish these points. In every instance in which I had an opportunity of examining the veins, the valves were perfectly healthy. Nor have I been able to confirm an observation made by Boyer, that varices are most apt to appear immediately above the situation of the valves. The truth is, valves are not often found in the midst of varicose enlargements, except in the saphena major above the knee. Even in healthy veins their number and position are indeterminate. I have at times been led to suppose that they are less numerous in persons subject to varices than in others. But if disease in the valves has not been shown to give rise to varices, the impairment of their function after the varicose dilatation has commenced, evidently tends to aggravate it. In Case XVI. after the saphena major had been divided, pressure applied immediately above the incision, instantly arrested the hemorrhage; but when applied at the distance of three inches above this point, it only served to aggravate it. The autopsic examination showed that a healthy valve situated between these two points, had not been able to prevent the regurgitation of the blood entering the saphena from a large collateral branch that opened into this vein above the valve.

VI. *Diagnosis.*—Varices may be overlooked or confounded with other diseases. In the thorax of persons dying of phthisis they have been found, where no such complication had been suspected.* We have no means of forming even a probable diagnosis of their existence, during life, in any of the natural cavities; except so far as they may occur in connection with other varices in vessels leading immediately into these cavities. Even in the superficial vessels they are sometimes overlooked. In the feet and lower part of the legs of adipose women, they may give rise to considerable swelling, which may be attributed to serous infiltration, or to irregular depositions of fat. At the groin, in the upper part of the saphena major, in the

* Morgagni, loc. citat.

superficial epigastric veins, or in the femoral vein, &c., they occasionally give rise to tumours, which may be taken either for aneurisms or for hernial protrusions. Instances of this sort have been noticed by Sir Astley Cooper,* Dupuytren,† Cruveilhier,‡ and others. The diagnosis in such cases is readily effected by pressing on the disordered veins, at the distal side of the tumour. In the lower part of the neck the veins are sometimes observed to pulsate, and when varicose may be mistaken for aneurisms. Morgagni in reference to these, says, "we may distinguish the veins I am speaking of from the carotid arteries, if we attend to their external situation, and the softness of their parietes; and especially if with Morand we observe that upon pressing the finger upon them, that part of the vessel which is below the finger shall, according to the laws of the circulation, subside; and that part which is above is increased, or at least preserves its former distention."§ Dupuytren also described a pulsating varicose tumour at the groin, that might have readily been confounded with aneurism of the femoral artery.|| Again, erectile tumours or aneurisms by anastomosis, when subcutaneous, may at times be mistaken for varices. Such I suspect was the fact in a case of reputed varices of the fore arm, quoted by M. Monfalcon¶ from M. Cartier. For the peculiar characteristics of these tumours I must refer to my essay on Telangiectasis.**

VII. *Terminations*.—I have already had occasion to speak of the disposition of varices to occasional attacks of turgescence or erethism, during which the hypertrophy of their coats progresses with rapidity. On the subsidence of this state, the undue amount of blood which it attracts towards the veins, forsakes them; they contract somewhat upon themselves, and may diminish their calibre so much, as in future to contain even less blood than naturally belongs to them. This same mode of termination also probably goes on in a more protracted manner in the ordinary process of the disease, where neither erethism, inflammation, nor ulceration, supervenes to interfere with the gradual hypertrophy of the coats of vessels. In persons who have recovered from one or two attacks of the venous erethism above mentioned; and in others who have long relinquished the laborious habits that gave rise to varices; and again, in very aged people who had formerly suffered from these, we occasionally find that their former varices have so far diminished as to give them no uneasiness, and to be distinguished only by their corded and irregular feeling under the skin.

The calibre of the vessels under the foregoing circumstances, is simply reduced in size; the second mode of favourable termination, is in absolute closure of the veins. This mode of termination I suspect, is effected only

* Lectures. † Medico-Chirurg. Rev. March, 1829, vol. x., new series, p. 575.

‡ Ibid. vol. viii., new series, p. 543.

§ Letter 18th, section 11th.

|| Medico-Chirurg. Rev. March 1829, p. 575.

¶ Dictionnaire des Sci. Med.

** American Journ. Med. Sci. vol. xxiv. p. 24.

by the supervention of active inflammation. When inflamed, the inner membrane of the veins throws out coagulable lymph, which interrupts the course of the blood through them; the blood itself coagulates, and adheres to the parietes of the vessel; the vessel itself adheres to the surrounding tissues, and if the inflammation is arrested in this its adhesive stage, the fibrinous effusion within the vein gradually becomes organised, the coagulated blood is absorbed; and the vessel is converted into a ligamentous cord, which at a still later period is finally resolved into its primitive cellular tissue. But if the inflammation proceeds to suppuration, and is still limited to the varices, fibrinous effusions, and purulent collections form both on their inner and their outer surface; the integuments ulcerate, and after the evacuation of the pus the inflammation subsides, and the varices are finally obliterated, as under the former circumstances.

Finally, varices may terminate spontaneously in death. The fatal result may be induced, first, by suppurative phlebitis, as in two cases already referred to; the one in the practice of M. Ribus, the other in that of Mr. Lawrence.* This mode of termination, occurring but seldom as a spontaneous result, is the most common in fatal cases after operations. The symptoms and anatomical characteristics of traumatic phlebitis, I have sufficiently illustrated in another place.†

Secondly, Varices may lead to fatal consequences by the direct loss of blood, as in Case III. A similar case is mentioned by Heister,‡ in which the patient bled to death in his bed. I have already referred to Morand's case, of rupture of a varicose jugular terminating fatally, and to Mr. Cline's case of a varix in the same vessel terminating in the same manner. In three cases reported by Dr. Elsasser,§ the patients, during labour, bled to death from the rupture of varices in the vulva. Four others are cited in the *American Journ. Med. Sci.* (vol. xvi. p. 234.) in which women under similar circumstances died of loss of blood from varices in the vagina and external parts of generation. Many writers, speaking of varices on the lower extremities, without reporting cases, allude to instances of fatal hemorrhage. It is incorrect, observes M. Velpeau,|| to say that varices are unattended with danger. The contrary of this was sufficiently proved by M. Girod in 1814. Petit has demonstrated the serious effects of ruptured varices. Two patients, mentioned by Lombard, died of these. Chaussier cites an instance of ruptured varix in a pregnant woman terminating fatally. Murat has given an account of a washer-woman who died suddenly of the same accident. In 1827 a similar case was mentioned at the Academy of Medicine. I saw, continues M. Velpeau, a countryman, in 1819, die of hemorrhage twenty-four hours after the bursting of a varix. The death of Copernicus was owing to this cause. MM.

* *London Lancet*, Sep. 10th, 1825, p. 305; and Jan. 20th, 1827.

† See my essay on secondary abscesses. *Amer. Journ. of Med. Sci.* v. xxi. p. 37.

‡ *System of Surgery*, vol. ii. p. 344.

§ *American Journ. Med. Sci.* vol. xvi. p. 233.

|| *Médecine Opératoire*, tom. ii. p. 262.

Reis, Lacroix, and Lebrun have published similar facts. A pregnant woman under the care of M. Forestier, from the same cause, was reduced to the same extremity. To this list of M. Velpeau's I may add, that in Cases VIII. and X., already reported, the danger from hemorrhage was equally as imminent as in the pregnant woman last cited.

Again, after operations the disease may terminate fatally, independent of phlebitis, by the extension of inflammation to the absorbents, with or without the concomitant formation of abscesses in the course of these vessels. The absorbents are, indeed, intimately involved in most of the diseases of the veins, whether spontaneous or traumatic. In cases of spontaneous obliteration of the veins, attended with dropsical effusions, M. Bouillaud* and others† have attributed the effusions to the obstruction in the veins, the real cause of which, however, was more probably owing to simultaneous diseases in the absorbent vessels accompanying the veins. For, there are numerous cases on record to show that veins even of the largest size, and many of them together, may be completely obstructed without giving rise to œdema or dropsical effusions. "I have already observed," says Mr. Brodie,‡ in speaking of varicose veins of the lower extremity, "that there are some reasons for believing that the venous branches are less liable to be inflamed in consequence of mechanical injury than the trunks in which they terminate." The observation is correct, so far as it refers to the occurrence of inflammation, and is probably owing to the fact that the trunk of the saphena is surrounded by an immense number of absorbents, that suffer under every operation upon this vessel, and participate in most of its diseases. In Cases VI. and XIII. the absorbents were evidently inflamed after the operation, as shown in the one by the enlargement of a lymphatic gland over the saphena major in the middle of the thigh; and in the other, by linear inflammation in the integuments and enlargement of the glands at the groin. In Case XVI. the fatal result was evidently induced by the extension of inflammation along the absorbents, and from them to the loose cellular tissue in their course along the psoas muscle. Such, also, was probably the cause of death in one of the cases given by Mr. Hodgson, the symptoms of which were analogous to my case, and the autopsic examination of which evinced enlargement of the inguinal glands, without any visceral disorder, and with evidences of phlebitis, to say the most, equivocal, and by no means sufficient to account for death. "The whole of the vein above the wound, as far as its junction with the femoral vein, was removed. Its internal coat was redder and more vascular than natural; no coagulable lymph or pus was effused into its cavity, nor was any other preternatural appearance observed in it."§

In the fourth place, death may be induced after operations, as in Case XV.,

* *Lancet*, June 26th, 1824, p. 407, from *Archives Générales* for May 1824.

† *American Journ. of Med. Sci.* vol. ix., p. 204, from *Arch. Gén.* for April 1831.

‡ *Medico-Chirurgical Transactions*, vol. vii., p. 201.

§ *Diseases of the Arteries and Veins*, p. 557.

by the excess of reaction, and subsequent collapse, in persons already much reduced by previous or existing disease. Here the fatal result falls into the general category of those from all other operations upon persons whose general health is equally depraved. I have known the same result from the removal of a toe, and in three instances from the application of ligature to small hemorrhoidal protrusions. It is worthy of remark, that in persons dying under these circumstances, we usually find firm fibrinous concretions in the heart. Are these the cause or the consequence of the collapse? To attribute them to phlebitis, without other evidences of phlebitic inflammation accompanying them, is neither philosophical nor correct.

Lastly, Death may ensue, after operations, independent of phlebitis, by the recession of blood from the varicose vessels into the course of the general circulation, a result most likely to occur in persons of plethoric habit, and immediately produced by the sudden engorgement or inflammation of one or more of the vital organs. Death, under these circumstances, is preceded by such symptoms of constitutional disturbance as would otherwise characterise congestion or inflammation of the organs upon which the onus of disease is fixed. The organs, perhaps, most frequently affected in this way, are the lungs. Hence the occasional detection of pleuritic effusion, pneumonia, and pulmonary engorgement in the bodies of those supposed to have died of phlebitis, but in whom the veins are either healthy, or but triflingly affected. Some of the older surgeons were sufficiently aware of the dangers resulting in this way from meddling with extensive varices. “*Il est meilleur,*” says Paré, “*de ne toucher aux inveterées, parce qu’elles preservent de plusieurs maladies, à cause que le sang regare aux parties nobles, dont s’ensuit ulcères et chancres et suffocations.*”* This observation, however, was not original. Galen, before him, had made the same remark: “*Quòd si venas illas turgent melancholico humore quis moliatur excidere, periculum imminet, ne homo corripiatur melancholia: id quod fieri sæpius est visum, non in varicibus modò, verum etiam in hæmorrhoidibus, quæ ex hujusmodi humore consistunt.*”†

Part Third. Treatment. I. General Indications.—In the treatment of varices surgical interference may be requisite; first, on account of the ulcers and inveterate eruptions, induced by, or accompanying them; secondly, on account of the repeated and alarming hemorrhage occasioned by them; and not unfrequently on account of other annoyances, as pain, turgescence, and rigidity of the limb; conditions, it is true, not often compromising life, but sufficient, nevertheless, to prevent the patient from following his usual occupation, and to render life uncomfortable.

The modes of treatment of which we are about to speak, it should be here remarked, have reference, principally, to the disease as it affects the lower extremities. Some of them are, indeed, applicable to the disease in the

* Les Œuvres, fol., p. 484. † *Epitome Galeni Operum.* Fol. Lugduni 1743., p. 341.

spermatic and hemorrhoidal veins; but varices in most other parts of the body either call for palliative treatment only, or are so situated as to be beyond the reach of art. A mere enumeration of the writers and surgeons whose names are connected with special modes of treating varices, would be no inconsiderable undertaking. Such of them as have given most attention to the subject, will be noticed as we proceed.

There are three distinct groups of indications to be fulfilled in the treatment of varices. The first of these is to prevent engorgement of the limb, and without undertaking to cure the disease, to keep it from increasing, or from exciting ulceration, or other concomitant affections; or to relieve these, when existing. The second is, to render more effective relief by reducing the size of the vessels, without suddenly obliterating them. The third is, to obliterate the varices at once, and to force the blood into new channels. The means employed for effecting the first of these are purely palliative measures. Those for the second are not always successful, and are sometimes dangerous. Those for the third are more efficacious than the others; but, at the same time, painful in their application, and still less exempt from danger.

II. Special Treatment. First. To prevent engorgement of the limb; to keep the disease from increasing, or from exciting ulceration, or other concomitant affections; or to relieve these when existing.

The most effectual mode of fulfilling these indications is by moderate and equal compression over the affected part, aided, as occasion requires, by elevation of the limb, simple dressings to the sores, specific applications for arresting hemorrhage; detergent, anodyne, or cooling applications to the eruptions.

Compression.—The credit of introducing gradual and equal pressure over the whole of the affected limb, for the relief of varices, has been awarded to Avicenna. The practice is probably of more ancient origin. The *caliga*, or legging, of the Roman soldiery, may have been employed, among other purposes, for relieving or preventing varices. Fabricius employed it, made of dog skin, for this purpose. In more modern times it has given place to the laced stocking, or gaiter, either of chamois leather or of cloth. The common roller has long been used for the same purpose. For these Mr. Travers has substituted adhesive straps. The starched bandage may be at times advantageously substituted for either of them.

Local Depletion.—Punctures, scarifications, or small incisions into the veins, for the purpose of unloading them, is a practice mentioned several times by Hippocrates,* and by some of the other ancient writers; and recommended by Paré,† Petit,‡ and other modern surgeons. In Case XVII. it was employed by the patient herself, suggested to her by her own sufferings, and

* Sect. I. De Medicis; also, Sect. VI. De Ulceribus.

† Les Œuvres, fol. Paris, 1579, p. 484.

‡ As stated by Hodg on and others.

frequently repeated, during states of unusual fulness of the vessels, with temporary benefit. As a means of treatment it is rarely advisable. The object for which it is recommended by Petit, viz., the evacuation of coagula, is frequently hypothetical. And the punctures and incisions, small as they are, when practised upon diseased vessels, subject the patient to all the dangers of more important operations, without offering him an equal chance of cure.

Second. To diminish the size of the vessels gradually and permanently.—Varices, as already stated, may in some cases be gradually reduced, if not actually obliterated, by a change from the habits or modes of life that give rise to them. This result will be more likely to ensue, when, to the change of habit, is superadded permanent and well regulated compression, with other adjuvants. But varices may be more rapidly, yet still gradually, reduced, by special modes of applying pressure, by exciting inflammation in the tissues surrounding them, or by other special modes of acting on the veins without dividing them.

Direct pressure on the veins.—Fabricius was in the habit of applying a compound astringent paste along the course of the varicose vessels, covering this with a reed, the hollow of the reed corresponding with the convexity of the paste; and binding on this dressing with ligatures, or with a roller drawn tightly round the limb. “Thus,” says he, “by the pressure, first of the roller, then of the reed, and by the astringency of the medicament, the varices have so far diminished as to appear to have been dried up.”

In Case XVII. I resorted to a process somewhat less complicated, which may be applied as follows:—Take a common wax bougie, somewhat larger than the medium size, cut it into pieces of an inch or two in length; secure these at the detached points along the course of the varices, (longitudinally where the vein is straight, transversely where it is thrown into tumours,) by means of small adhesive straps. Then secure the whole with a common roller, laced stocking, or starched bandage, which should be applied as tightly as the patient can conveniently bear: the ordinary bandage, or stocking being the best for the first few days; and the more permanent application afterwards, as soon as the swelling which usually accompanies the varices has subsided.

Mr. Travers succeeded in obliterating a varicose cyst of the saphena, behind the inner condyle of the knee, by means of adhesive plaster, applied in strips around the limb with as much tightness as could be borne. “The vein took on inflammation, and the cyst became a perfectly solid tumour, which afterwards shrunk, and was perfectly obliterated. The inflammation was severely painful, and accompanied by extreme tension of the part, and with considerable fever.”*

Local irritants.—With a view to reduce the varices without obliterating

* Surgical Essays. Philad., p. 190.

the vessels, Mr. Mayo* recommends the application of an escharotic, composed of equal parts of soft soap and potassa, to the integuments. More recently MM. Laugier,† Berard,‡ and a few of the English surgeons,§ have employed the Vienna paste, a compound of equal parts of quick lime and potassa, for the same purpose. These applications, whatever be the special mode of using them, may give rise to diffuse phlebitis, to hemorrhage, and even to fatal consequences; and, if not carried so deeply as to excite adhesive inflammation in the vessel, they necessarily fail. Mr. Brodie,|| with the same view, has advocated the application of blisters along the course of the diseased vessel; a measure, from what I have seen of it, less likely to succeed than it is to prove injurious.

I do not find that electricity has ever been employed by any of the surgeons who have written on the subject of varices. A case is reported in the *Lancet*,¶ of a midwife who employed it for the cure of the disease in the vessels of her own limbs, as she states, with much relief.

The tincture of iodine, first introduced, I believe, by Mr. Herbert Finch** for the cure of varices, has recently found some favour with the profession. When applied of sufficient strength to act as a caustic to the integuments over the varices, it may perhaps be attended with some benefit.

Third. To obliterate the varices at once, and to force the blood into new channels.—The anastomosis between the superficial veins of the lower extremity, as, indeed, between the veins in every other part of the body, are exceedingly numerous. Several of the largest vessels of the leg, including both saphenas, may be totally obliterated, without impeding the circulation. The blood, under these circumstances, is returned, at first, mostly by the deeper vessels, but, soon after the interruption, by numerous superficial anastomosing branches, as shown in Case XVI. Before these superficial vessels are sufficiently enlarged, the blood, indeed, has to seek the deeper channels; but the contraction of these from the action of the muscles obliges it to seek another course, external to the fascia lata, through which it can move at all times, free from the impediment of muscular pressure, to which the deeper veins are continually subjected, and which renders them, for the most part, empty during moments of active exertion.

Aware of the ease with which the blood is returned by new channels after

* *Medico-Chirurg. Rev.* vol. x. new series, p. 250.

† *Bulletin Chirurgical*, 1839, quoted by Dr. Scratchley in *Lancet*, May 14th, 1842. p. 225.

‡ *Gazette Médicale de Paris*, Jan. 22, 1842.

§ Dr. Scratchley, and Mr. Clay of Manchester. *Lancet*, July 18th, Aug. 29th, Oct. 17th, Dec. 12th, 1840, and July 24th, 1841.

|| *Lancet* July 5th, 1838, p. 446.

¶ *Lancet* April 5th, 1834, p. 44.

** *Lancet* Aug. 24, 1833, p. 707.

its proper veins have been obstructed, surgeons have long been in the habit of attempting the obliteration of these veins when diseased; and for this purpose they have employed a great variety of measures. Among these may be enumerated laceration, cauterisation, excision, erosion, ligature, incision and its modifications, the seton, and special modes of compression between folds of the skin, with a vice or clasp, or with pins and twisted sutures.

Laceration. This barbarous mode of treatment was in use among the early Romans, and was practised, as we are told, on Caius Marius, who, after submitting to it on one leg, refused to have it tried on the other. It was performed, according to Paulus, by elevating the varicose veins, and tearing them forcibly from their attachment.

Cauterisation. The actual cautery is recommended by Celsus; but like the foregoing treatment, it has long since been rejected.

Excision. The removal of varices by excision, was also practised by the ancients, as we learn from Celsus,* Galen,† and Paulus Ægineta.‡

1st. By multiplied incisions. This the Celsean method, is performed by dividing the skin, drawing the lips of the wound apart with small hooks, laying the vein bare with a scalpel and passing a blunt hook under it. After thus exposing the vessel at one point, the operation is to be performed at intervals of four fingers breadth along the whole extent of the varix. The first hook is then to be raised, and the portion of the vein resting upon it, is to be excised; and so with the rest, until all the exposed portions are removed. The lips of the wounds are then to be approximated, and covered with agglutinating plaster.

2d. Preceded by ligatures. Galen operated in two ways; first, when the varix was small, by simply excising it; and again, where the vein was likely to bleed freely when divided, by first placing ligatures upon it, and then dividing it between these.§

3d. With temporary compression and subsequent ligature. Paulus Ægineta describes the operation on the saphena major above the knee. He commences by binding the upper part of the thigh with a cord, and directing the patient to walk about, in order to render the varix prominent. He then traces its course with ink upon the skin. He now directs the patient to lie

* Lib. vii. Cap. xxxi. † Epitome Galeni Operum. De Methodo Medendi. Lib. xiii.

‡ On the authority of Paré and Fabricius.

§ The early introduction of the ligature as a means of arresting hemorrhage from both arteries and veins, appears to have been forgotten of late. The following is the whole of the passage in which it is spoken of by Galen. "Quod si inter nudandum appareat tibi vas magnum, aut magnum exhibere pulsum, tutius fuerit vinculo id prius excipere, mox quod in medio est, præcidere. Sunto autem ejusmodi vincula ex materia aliqua minimè putrescibili, potissimum si iis arteriæ sint excipiendæ. Etenim quæ caro in abscissis vasorum partibus coalescit, ea pro operculo est, atque ipsorum oscula claudit. Quod quidem ubi factum jam cernimus, decidere tunc tñd vincula possunt. Ac sic etiam varices curamus, quæ dilatatæ sunt venæ, potissimum circa crura et testiculos."—Epitome Galeni Operum fol. Lugduni, 1643, p. 459.

down, and ties a second cord just above the knee. Then, with a scalpel, he divides the skin over the part marked with ink; he next detaches the vessel from its membranous envelopes, seizes and elevates it with a hook, cuts it off, unties the cord, allows a certain amount of blood to flow when this can be done with safety, and then applies the ligatures above and below, which he passes beneath the vessel by means of a needle, and perhaps, also, through the skin, making them at the same time serve as sutures, for closing the lips of the wound.*

Erosion. We have already spoken of the potential cautery, as recommended by Mr. Mayo, for partially obliterating the diseased vein. The difference between this mode and that long since recommended, (as we are told,)† by Paré and Guillemeau, is scarcely appreciable, except that the older surgeons applied the caustic so deeply, as at once to erode the coats of the vein, leaving a space between the open orifices, to be filled up by cicatrization. As a means of radical cure even this bolder use of the caustic is liable to failure, unless applied as recommended by Mr. Bonnet,‡ along the course of the veins, at intervals of three or four inches; and even repeated, where the first application fails to reach the vessel. The dangers attending this mode of practice are numerous. It gives rise to abscesses along the course of the vessels, to alarming hemorrhage, to diffuse phlebitis, and has resulted fatally.

Simple Ligature. To Sir Everard Home we must attribute the institution of this practice. The ancients, as already shown, employed the ligature in connection with other means; but only for the purpose of arresting hemorrhage. Home was the first to publish any account of it as a means, by itself, for removing varices.§ Supposing them mainly to depend on thickening

* It is remarkable that several recent writers give the credit of the operation here described to Ambrose Paré, whilst Paré himself, as shown by his marginal note, has evidently given the credit of it to Paulus. The mode of applying the ligature, however, as given by Paré, is more after the manner of Galen. Fabricius, from whom I have taken the operation, seems to have some doubt as to the exact mode in which Paulus applied the ligature.

† Several authors attribute to Paré the first employment of the potential cautery in the treatment of varices. In the copy of his works to which I have access, I find no mention of this practice; at least, none in the chapter devoted to the subject of varices: and I am still more surprised that in another chapter to which M. Bonnet refers, (livre 13, chap. xx. p. 315,) he does not even so much as mention varices. The following, however, is the passage, cited by several writers, in which he speaks of the caustic, and which I am obliged to give on the credit of M. Bonnet. "Autre moyen de couper les varices, c'est d'appliquer un cautère potentiel qui rouge et coupe la veine, puis se retire en haut et en bas. Par ce moyen, il y demeure un espace vide où après s'engendre de la chair, et puis la cicatrice qui sera dure et épaisse empêchera la fluxion en bouchant le passage de ladite veine, et, par ce moyen, la veine variqueuse sera guérie."—Archives Générales, Mai, 1839, p. 48.

‡ Mémoire sur la Traitement des Varices. (Archives Générales, Mai et Juin, 1839.)

§ Practical Observations on the Treatment of Ulcers on the Legs, &c., chap. ix.

and rigidity of the valves, which prevented these from occupying the whole area of the vein, it appeared to him no small object to take off a part of the pressure of the column of blood, by establishing an artificial valve; and this he did by applying a ligature to the saphena major near the inner side of the knee, just above the point at which the branches from the leg unite to form the common trunk. He appears, however, to have borrowed the practice from Mr. Hunter, who, in one case, operated in this way on several branches. As a means of cure, the simple ligature is frequently effectual, but not uniformly so. It has frequently proved fatal; and the dangers attending it are so numerous, that it has for the most part been abandoned.

Incision.—1st. *Longitudinal Incision.* This plan of treatment, introduced by Mr. Richerand* in 1823, has had but few advocates. It consists in making a longitudinal incision of some inches in length, through the integuments and diseased vessel; and after unloading this by the escape of blood, filling the wound with lint; and allowing it to heal by granulation. 2d. *Transverse Incision.*—This practice originated, so far as I can ascertain, with Mr. Brodie,† who, in speaking of it, observes: “I found it to be preferable to the use of the caustic, as the operation occasioned less pain, and as (in consequence of there being no loss of substance) the wound was cicatrised in a much shorter space of time.”‡ He soon, however, relinquished it for his simpler and safer operation, viz: 3d. *The Subcutaneous Incision.*—This he performs with a narrow convex bistoury, which he introduces through the skin on one side of the varix, and passes in between the skin and vein, with one of the flat surfaces turned forwards and the other backwards, until it reaches the opposite side. He then turns the cutting edge of the bistoury backwards, and in withdrawing the instrument the division of the varix is effected. He recommends this operation only when there are but few varices in the limb; and performs it on the branches, but never upon the main trunk of the saphena. I have already shown its liability to failure. It was at first looked upon as entirely free from danger. We are told, however, that such is not the fact. “Division of the vein with a valvular wound of the integument is surely no violent injury to the vessel, and yet it is occasionally followed by fatal inflammation.”§

The Seton. This operation, invented by M. Fricke, is performed by transfixing the vein with a needle, armed with a single thread, leaving the thread in the wound, traversing the vein; and allowing it to remain there long enough to excite adhesive inflammation in the varix, and thus to consolidate the vein. The procedure is to be repeated at two or three points

* Philadelphia Med. and Physical Journal, vol. viii. p. 449, from *Medico Chirurg. Rev.* March, 1824.

† *Medico-Chirurgical Transactions*, vol. vii. p. 195, *et seq.*

‡ In other hands it has terminated fatally. See Velpeau, (*Médecine Opératoire*, vol. ii. p. 259.

§ *Medico-Chirurg. Review*, vol. x. p. 251. December, 1828.

along each of the vessels affected. This operation too, like most of the others, has been attended with fatal consequences.*

The Elastic Truss. This is spoken of by Sir Charles Bell,† and Mr. Colles.‡ The latter is said to have used it with considerable success. He applies the pad of a circular truss over the saphena major at the groin, with force sufficient to prevent the passage of blood through the vessel.

The Vice, or Screw Forceps. This instrument, applied by its inventor, M. Breschet,§ for the cure of varicocoele, was afterwards used by M. Sanson in the treatment of ordinary varices. It consists of two parallel iron plates, cushioned on their inner face, which are approximated, or separated, by means of screws. For applying it, the vein must be elevated on a fold of integument, and then embraced between the two plates of metal, which are approximated by means of the screws, until they are sufficiently close to interrupt the circulation, or even to excite a slough, in all the parts embraced between them. The application of this instrument is attended with much pain. The surgeon is obliged to shift it frequently from point to point, along the track of the vein. If not applied with sufficient force to cause a slough of the skin, it is not likely to produce a permanent closure of the vessel. From the trials which I have seen with this instrument, in the practice of M. Sanson, I should never dream of using it.

Subcutaneous Stricture. There are several distinct modes of interrupting the circulation through the vessel, by pins and ligatures, without exposing it; all of them of recent origin.

1st. *M. Davat's Method.*|| This surgeon commences by applying a temporary bandage just above the knee, and then requiring the patient to walk about for a few moments, in order to distend the varices. The patient then sits down; and the surgeon elevating the saphena major in a fold of integument, passes a needle transversely through the skin, beneath the vessel, and so on out at the opposite side. A second needle is next to be carried through the skin and the coats of the vein, under the first pin, and at right angles with it; and then brought again through the vessel and integuments to the surface, thus puncturing the vein at four points; and pressing it so firmly against the first pin, which lies under the vessel, as to arrest the course of the blood through the vein. These pins are now to be secured by a thread, in the form of a twisted suture, which is not to be applied very tightly; and allowed to remain until they become loosened by the ulcerative process, and then removed. If the first operation do not remove the whole

* Velpeau, Médecine Opératoire, vol. ii. p. 269.

† Lecture, in London Medical Gazette, vol. xiii. p. 423.

‡ Velpeau, *ut supra*, p. 266, and Library of Practical Medicine, 2d edition, Phila. vol. ii. p. 625.

§ American Journ. Med. Sci. vol. xvii. p. 234.

|| Du Traitement Curatif des Varices. Par Davat, 8vo. Paris, 1836. See also review of the work in American Journ. Med. Sci. vol. xx. 460.

of the varices, he repeats it afterwards at a few points, in the branches of the saphena, lower down. This operation is less dangerous than that by the seton; but it has, nevertheless, led to fatal results.*

2d. *M. Velpeau's Method.*† This surgeon uses but a single pin for strangulating the vessel at a given point. This he passes transversely beneath the vein without puncturing it, precisely in the same way as that practised by M. Davat for the passage of the first pin. But he repeats the process at two or three points upon the saphena above the knee, and upon all the dilated branches on the leg and foot; using eight, ten, or even fifteen pins upon the same limb. Sometimes, however, says he, two or three applications are sufficient. After thus inserting the pins, he embraces the extremities of each of them in a circular ligature, which is to be tied with sufficient force to strangle the portion of integument and vein resting upon the pin, and to cause it to slough. With this practice Mr. Velpeau was at first remarkably successful, having had more than a hundred cases before he met with an instance in which it terminated fatally. Of late, however, his success has not been so great; and it is now conceded that this operation is as dangerous as the rest. In one case that terminated fatally, it was found that the pin had been so placed as not to interrupt the track of the vessel.‡ Such indeed is likely to be often the case, especially among the lower branches of the saphena, where, in consequence of the induration of the tissues, it is sometimes impossible to raise the vein sufficiently to allow the pin to be passed transversely under it.

3d. *M. Regnaud's Method.*§ This consists in passing a thread, by means of a needle, transversely under the vein; applying a roll of basilicon, or of wax, or a small graduated compress, on the integuments immediately over the vessel, and then drawing the ends of the thread tightly over this, and tying them in a slip knot. The ligature in this way may be tightened or loosened at pleasure. It is not so likely to be efficacious in obliterating the varix as either of the two former methods.

4th. *M. Ricord's Method.*|| This process has been more particularly used in reference to varicocele; but it is also applicable to varices on the lower extremity. It consists in passing two ligatures transversely; the one beneath, and the other above the level of the vein; but both below the skin, and traversing the integuments through the same openings. When thus applied they are to be tightened, by tying their extremities together with sufficient force to strangle the vessel.

III. *Appreciation.*—The foregoing summary of operations, constitutes a formidable list, sufficient in itself to show the difficulties and dangers both of the disease itself, and of the measures that have been devised for overcoming it. Severe as some of these measures are, they are all subject to failure;

* Velpeau, loco citat. p. 270.

† Loco citat. p. 271.

‡ Medico-Chirurg. Review, vol. xxxvi. N. S. p. 556.

§ Ibid, p. 275.

|| Amer. Journ. of Med. Sci. vol. i. new series, 1841, p. 516.

and with the exception of simple compression, and one or two other means, even less efficacious than this, there is not one of them thus far practised to a sufficient extent, to prove its efficacy, that has not led to fatal consequences. Nay, even pressure itself is not practised at all times with impunity. Some of these operations are, doubtless, intrinsically more dangerous than others. But their danger is in proportion neither to their efficacy, nor their apparent severity. It holds a more exact relation to the susceptibility of the veins already diseased, to an aggravation of their morbid action; to the state of these veins before the operation; and to the patient's general health at the time of submitting to it.

It is to be regretted that we have no statistics worthy of the least dependence, for establishing the proportionate mortality that has attended operations upon diseased veins. Those who have published the results of their own experience, have almost invariably presented us with a striking array of successful cases, in order to set off some new or favourite invention, leaving the counter-stroke of failures and fatal consequences, to be either guessed at or heard of accidentally from others.

A principle of much importance, one upon which any operation, to be successful, should be founded, is the necessity of interrupting the circulation at more points than one in the course of the varicose vessels, and of multiplying these interruptions in proportion to the extent of the varices and the freedom of their anastomoses. This, though evidently the principle upon which the operation of Celsus was founded, appears to have been forgotten for a time, until the attention of the profession was again called to it by M. Bonnet. Impressed with the importance of it, and believing, as I still do, that a vein is less likely to become inflamed after a clean section, than after any other operation upon it; and rejecting the caustic, as recommended by M. Bonnet, I undertook the operation as detailed in the foregoing cases. But if the result of these bears out the importance of this principle, they also show that a clean cut cannot be made through a diseased vein without endangering the life of the patient.

Still the disease is a dangerous one; or, if not dangerous, troublesome and distressing. What then is to be done for it?

If called upon to treat a varicose limb, free from complication either with ulcers, eruptions, local inflammation, or constitutional disturbance; until some means is discovered more simple and efficient than any yet employed, I should treat it with the view of fulfilling the second indication, as I have described under the head of direct pressure, and as practised in Case XVII. If there be an ulcer, I would elevate the limb; dress the ulcer as any other under similar circumstances, independent of the complication; apply a simple roller to the limb; and after curing the ulcer, treat the varices as before. Are there eruptions; are the veins turgid and painful; or is there any local inflammation complicating the varices? Treat the one or the other of these as independent affections; by elevating the limb; applying detergent, anodyne, or antiphlogistic lotions, or other similar applications; and

after curing or relieving these, attend to the varices. Is there hemorrhage? Elevate the limb; keep the patient quiet on his back; apply a compress and roller until the ruptured vein has healed; and afterwards attend to the varices. In a word, whatever be the complication, palliate the disease until this is overcome; and then undertake the treatment of the varices, by attempting to effect their gradual and permanent diminution.

ART. IV.—*Remarks upon the cases of Smallpox admitted into the City Hospital during the years 1840, 41, and 42.*—By THOS. STEWARDSON, M. D., Physician to the Institution.

TOWARDS the close of the year 1839 a few cases of smallpox made their appearance in Philadelphia, and in February 1840 the city hospital was opened for their reception. This hospital is situated upon an elevated piece of ground called Bush Hill, in the neighbourhood of the city, and is admirably calculated, from its position and the facilities for thorough ventilation, to accommodate patients labouring under contagious diseases. The number of patients admitted from the period when the house was opened until the 2d of August, 1842, when it was again closed, was 281. Of this number one entered as nurse to her child, a few laboured under measles, &c. The others, amounting to 266, were cases of variolous disease, which assumed, in the majority, the form of true smallpox, in others that of varioloid, and in a few presented such characters that it was difficult to determine to which of the two they properly belonged. These last were entered in the register as doubtful, and it is possible that among them a very few may be included which were not properly variolous. The exact numbers and mortality were as follows:

	Smallpox.	Varioloid.	Doubtful.
	161	73	32
Deaths	<u>41</u>	<u>0</u>	<u>3</u>

From this it appears that the mortality in the true smallpox was about one in four, a proportion of deaths vastly less than that of the epidemic of 1823 and 1821, as described by Drs. Mitchell and Bell, and in which more than half of the unprotected cases reported by them died. In the London smallpox hospital, according to Dr. Gregory, the average mortality of twenty-five years prior to the introduction of vaccination was thirty-two per cent., and that of the late epidemic of 1838 about thirty-six per cent., excluding the modified form of the disease. In the epidemic already referred to, as described by Drs. Mitchell and Bell, it was observed that the African

race seemed to be peculiarly obnoxious to the disease, the actual number of people of colour brought to the hospital, as well as the proportionate mortality being greater among them than among the whites, the deaths among the former being as four to six cases of the disease, and amongst the latter as two to four. Of the 266 cases observed by me there were 152 whites, and 114 coloured; the deaths among the former being 24, and among the latter 20. If we take merely the cases of true smallpox, they stand as follows:

	Whites, 79	Coloured, 82
Deaths	<u>22</u>	<u>19</u>

From hence it appears that the proportionate mortality in the cases under consideration was nearly the same amongst the coloured as amongst the whites. Of the comparative liability of the two colours to be attacked by the disease I have no means of judging, the relative numbers admitted into the hospital being evidently no test.

The influence of vaccination in modifying the severity of the disease, will be seen from an examination of the following table. In endeavouring to determine whether the patient had been previously successfully vaccinated, he was usually interrogated with care in reference to the point, and the arms examined in order to determine whether any, and what kind of mark, existed. Still, in some cases, it was difficult to settle the question certainly, and in others, as, for instance, when the patient entered moribund with an extensive eruption, it was at times impossible to obtain any information upon the subject. Inoculated patients were so rarely met with that this point of inquiry was at times neglected; and some of the patients are merely entered in the register as not vaccinated. Had any of these, however, laboured previously under inoculated or natural smallpox, the fact could scarcely fail to have been known, and I have therefore placed them under the head of unprotected patients. A considerable portion of those placed below under the head of doubtful or unknown were, in all probability, unprotected.

	Unprotected.	Vaccinated.	Unknown or doubtful.	Inoculated.	Inoculated or vaccinated
Total	<u>113</u>	<u>97</u>	<u>51</u>	<u>2</u>	<u>3</u>
Deaths	30	4	10	—	—

Of the four deaths after vaccination, one occurred from pneumonia, two days after the patient's admission. The variolous disease was mild, the pocks few in number, the pneumonia being indeed the principal affection, and evidently independent of the former. The results of the above table are clearly calculated to confirm our confidence in vaccination, especially when we reflect how comparatively small a portion of those who have been vaccinated contract smallpox, even in the modified form; as in the present day in this city the whole number of persons vaccinated greatly exceeds that of the unpro-

tected. Besides, it can hardly be doubted that even the small mortality which now occurs after vaccination might be greatly lessened by the practice of revaccination, not because the influence of the first has been lessened by time, but because, in many instances, the system has never been fully brought under the influence of the disease. It is not a little curious, that, amongst those in whom vaccination was attempted but failed, the mortality was greater than in any other class; for, out of eleven patients so circumstanced, five, or nearly one half, died.

The admissions during the different seasons of the year were as follows.

	1840.		1841.		1842.	
	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
January,	0	0	3	0	13	1
February,	1	0	16	2	14	2
March,	2	0	21	5	5	1
April,	5	1	21	2	7	0
May,	5	0	15	2	5	0
June,	0	0	16	2	4	0
July,	1	1	15	3	3	0
August,	1	1	11	2	1	0
September,	4	0	10	5	0	0
October,	3	1	21	4	0	0
November,	4	1	20	5	0	0
December,	5	1	14	2	0	0
Total,	31	6	183	34	52	4

It will be seen by the above table that but few cases occurred in 1840, that early in 1841 they rapidly increased, and again gradually diminished in 1842, until in the month of August the house was closed. The influence of the summer months in diminishing the frequency of the disease is very apparent. By a reference to the register of deaths for the city, we find the same remark holds good, the number of deaths from smallpox during the three spring months, viz., March, April, and May, of 1841 being 64, that during June, July, and August 51, whilst during the following three it increased again to 100. The total number of deaths in the city for this year were 5833, those from smallpox being 259, or rather less than a 22d part of the whole number.

In the hospital but few young children are admitted, but, by reference to the city register, we find that of the 259 deaths above mentioned, 143, or considerably more than half, were of the age of five years or under. Of the same number 155 were males and 104 females.

Secondary affections, viz., ophthalmia, swelling of the lymphatic glands, abscess, erysipelas, internal inflammation, &c., were met with from time to time in the hospital cases, but could hardly be considered as frequent, and rarely gave rise to serious consequences. Two deaths only could be attributed to these causes, viz., one from erysipelas, and one from cancrum oris, in a child about three years of age. To these, perhaps, should be added an individual who died on the 58th day after admission of sloughing

ulcer on the back and hip. The exact period after the appearance of the eruption at which death took place cannot be known from the register, but we are perfectly safe in stating that the great majority took place in the course of the second or early part of the third week. The comparative freedom from secondary or concomitant affections may perhaps in part be attributed to the location of the hospital, and its excellent construction for ventilation.

The treatment employed was very simple, and such as we believe is now generally approved of. The daily use of small doses of citrate of potash, an opiate at night where there was much restlessness, and an occasional cathartic, were all that was necessary, in a large proportion of the cases. When the eruption was abundant and did not fill well, weak milk punch was freely resorted to at this stage. The punch was rarely made stronger than a wine-glassful of brandy to a quart of milk, to be used in the twenty-four hours. Of course it was necessary to watch its effects, and occasionally its employment might be contra-indicated by the condition of the stomach, or other causes, but as a general rule it was clearly beneficial in the cases mentioned. When the tongue became dry, the fever considerable, &c., small doses of calomel were sometimes used with advantage, as in other cases of fever. Bleeding was scarcely ever resorted to, and indeed the patients were rarely brought to the house until after the eruption had made its appearance.

To relieve the sore throat a gargle of Cayenne pepper was usually resorted to, and commonly with good effect. In a few cases, however, it seemed to aggravate the inflammation, and gargles of sage tea and alum, &c. were substituted. Now and then it was found necessary to apply the powdered alum directly to the part. Mild lotions, made with the pith of sassafras, were commonly all-sufficient to control the conjunctival inflammation. When more severe, leeching was occasionally resorted to; but upon the whole a few drops of a solution of about 4 gr. of nitrate of silver to the ounce of water once in the twenty-four hours exerted the most decided control over the inflammation.

In the spring of 1841 I commenced using the mercurial ointment, which had been recommended with the view of producing abortion of the pustules and preventing cicatrices. The plaster was first applied to a portion of the face and of the fore-arm severally of two patients in whom the eruption was considerably advanced, probably about the fifth day, but little effect was observable. It was next applied to a part of the lower limb of a child about four years old on the third day of the eruption, and removed on the sixth, when the pocks beneath were found much less developed than elsewhere, and some of them absolutely aborted. In another child, similarly circumstanced, but little effect was apparent, except over a small part of the leg where the plaster had been closely applied, its imperfect application elsewhere being probably the cause of the slight influence produced over the rest of the surface. It was now applied to the forehead and right side of the face of a black girl aged 19, in whom the pocks were moderately abundant, on the

third day of eruption, and removed on the eighth, when the pustules beneath were found aborted, especially over the cheek, whilst on the opposite side they were full and just beginning to turn. The skin here also was tender to the touch, which was not the case on the right side; this difference being very marked even between the two sides of the nose. Subsequently the pock dried away on the right side without forming scabs, whilst the left was studded with them. At the time of her discharge, 16 days after the removal of the plaster, it was evident that the pustules had left a much deeper impression on the left than on the right side, but whether any permanent pits would be left may be doubted.

In a white girl, aged 20, the plaster was affixed to the whole of the forehead and face, on the second day of the eruption, which was pretty abundant, and removed on the sixth, when the pustules beneath were found, generally, aborted. On the ninth day, when the pustules on the neck and breast were full, the cheeks were nearly smooth, and no scabs existed on any part of the face except a few on the end of the nose. A week afterwards, when discharged, some very small pits were observed on the nose, but scarcely any decided pitting elsewhere.

Having thus satisfied myself that a decided influence was exerted by the mercurial plaster upon the development of the pustules when these had not advanced beyond the third day, it became important to determine whether the same influence would not be exerted by simple ointments, such as lard, or simple cerate. For this purpose it was important to institute a comparison upon corresponding parts of the same individual, as in this way all sources of error, such as those arising from differences of constitution, the form, progress, severity, &c., of the disease would be avoided. Indeed it is quite clear that a single satisfactory experiment of this kind would be more conclusive than a large number in which different individuals were the subjects of comparison.

Mary Holmes, white, aged 22, unprotected, entered hospital June the 7th.

8th. Third day of eruption, which was moderately abundant only, and presenting as yet hardly any vesicular appearance on face, a plaster of mercurial ointment was affixed to the left side of the forehead and face, and one of lard to the right, and on the following day the simple cerate was substituted for the lard.

13th. Eighth day of eruption. On *right* side, where simple cerate was applied, the pustules are matured, opaque, more so than on neck, small as elsewhere. On *left* side, they are generally aborted, or contain very little matter. On the ala of nose, &c., where the ointment was imperfectly applied, a few are matured but very small. The arrest of development on this side gives to it a strikingly different aspect from the opposite.

14th. On *right* side, the pustules matured, opaque, like those on neck and breast, the cheek tender to the touch. On *left* side, maturation very imperfect, none of the pustules opaque except a few about ala of nose, &c., the

rest being red elevations, with a trace of demi-opaque fluid at the summit; cheek not tender to the touch, and can be rubbed without the patient's wincing.

18th. Thirteenth day. On right side, pustules have not yet dried. On left side, some are a little whitish, but contain no fluid except along ala of nose, &c. Some difference as before between the two sides, though less in degree, as regards tenderness to the touch. On neck, chest, and arms, some only of the pustules are beginning to dry, the fluid which they contain being of a very dead white instead of yellow.

23d. Eighteenth day. Since last note, some of the pustules on left of face have come forward a little, but have not matured and formed green scabs as on the opposite side, which has continued sore and been somewhat swollen; whilst the left, as before noted, is not tender to touch, and either not swollen at all, or decidedly less so than the opposite side. The left side of face indeed felt so much more comfortable, that yesterday the patient remarked that she wished I had applied the ointment to both sides. To-day on right side, the scabs are pretty thick and greenish, there being scarcely any on left side, where the pustules present the appearance merely of dead white loose epidermis.

July 19th. Forty-one days after admission, she was discharged cured, the pitting on the left side of the face being decided, but the pits smaller than on the opposite side.

The same experiment was tried in the case of a black girl, when the eruption was probably about at the 6th day, but still vesicular, and the same differences between the two sides were observed, but less in degree; the process of maturation on right, when the mercurial ointment was applied, being partially arrested only, whilst on the left the pustules were full, and the face swelled so as to occasion a striking contrast with the opposite side, which was also less tender to the touch. When discharged, the face was pretty deeply pitted on both sides.

From these experiments, it seems pretty evident that the mercurial plaster has a decided influence upon the smallpox pustules, preventing more or less completely their perfect maturation, and diminishing the concomitant swelling and soreness, the process of desiccation being completed without the formation of thick scabs, and the resulting cicatrices less marked than when the process of suppuration was left to pursue its natural course. It is also apparent that this influence is chiefly observable in cases where the eruption has not advanced beyond the third or fourth day.

Having satisfied myself of the general fact, I continued to apply the ointment in cases where the eruption was abundant, and had not advanced beyond the period mentioned. The application was made by spreading the mercurial ointment upon a piece of thick muslin, previously shaped like a mask, with apertures for the eyes, nose, and mouth, and extending from the ears and roots of the hair to the lower margin of the jaw; and kept in its place by strings attached to its posterior margin, and tied across the back of

the head and neck. A separate piece was made for the nose, but notwithstanding every precaution, there were certain parts, as the crevice around the ala of the nose, its point, &c., which could not be kept in perfect apposition with the plaster. To avoid this, it is recommended by M. Briquet, to smear the ointment over these parts before applying the mask. The same gentleman, I find, recommends that the mask should be several times removed and spread with fresh ointment, a precaution not often taken in the cases which I have treated. Had it been, it is altogether probable that the effects would have been still more marked. In some cases the strong mercurial ointment was used, and in others it was rubbed down with an equal bulk of lard. It was sometimes difficult to resist the pressing solicitations of the patients to have the plaster removed, especially in the summer season, when the melting of the oily parts, and the greater moisture of the skin, rendered its presence very annoying. The same difficulty, however, is not experienced during cooler weather. In one case the mercurial plaster of the pharmacopœias was used, but owing to its stiffness and adhesiveness, was found less easy of application, and more uncomfortable than the ointment. No apprehension I think need arise on the score of the system becoming affected, for scarcely ever were the gums even touched.

Upon the whole, it seems to me that the use of the mercurial ointment, in the manner above described, is decidedly beneficial when early resorted to in cases where the eruption is abundant; not merely in lessening the liability to cicatrices, but in diminishing the swelling and preventing the formation of thick crusts. That by its use pitting may be entirely prevented, or the mortality from smallpox materially lessened, seems to me very doubtful, although had all the precautions above mentioned been taken, it is not improbable that the effects would have been still more decided.

ART. V.—*A Nasal Operation for the removal of a large tumour filling up the entire nostril and extending to the Pharynx.* By VALENTINE MOTT, M. D. [With two wood-cuts.]

WHEN the following operation was announced in the No. of this Journal for January, 1842, I was not aware that any one had operated in a similar case. It having been asserted that Professor Syme, of Edinburgh, had performed the same operation, I immediately addressed a letter to him on the subject, describing my case, and requesting to know if he had met with anything like it. He promptly and kindly replied, and states—

“You will find a case somewhat similar, in the 9th report of the Edinburgh Surgical Hospital, published in the Edinburgh Medical and Surgical

Journal for 1832, the 31th vol. There is another recorded by Mr. Flaubert, of Rouen, in the Archives Gen. for August, 1840."

This case, which was published in the Edinburgh Medical and Surgical Journal for 1832, is of trifling extent compared with the one we have described. The operator first divided the upper lip to the septum nasi, turned the flaps aside and detached the lip from the jaws so as to expose the tumour without detaching the columna or ala of either side. This he did, "to obtain sufficient room for extracting a large fibrous polypus which projected both externally and into the pharynx, but did not succeed." He says, "afterwards when the symptoms had become much more urgent, I removed the superior maxillary bone, as the only means of relieving the patient from the disease."

M. Flaubert, of Rouen, in 1840, performed the formidable operation of exsecting the superior maxillary bone for a large fibrous polypus of the left nostril, extending to the pharynx. Various attempts to remove this morbid mass were made with wires and ligatures, by the operator and his father, with partial success only. This patient recovered completely with very little deformity.*

Yesterday I received a small sheet published by Professor Syme, and extracted from the London and Edinburgh Monthly Journal, for Sept. 1842, containing a second operation for nasal polypus. He found this case of a malignant character, and after cutting off the projecting portion of the tumour the patient was informed that nothing more could be done for his relief, and was discharged from the hospital as incurable. No evulsion was at any period attempted.

After a short time the patient returned in consequence of repeated bleedings from the tumour, and urged for the sake of his family to have some operation performed, to give him any chance of having his life preserved.

Professor Syme says, "I resolved to try what could be done for the poor man's relief. An incision was made through the upper lip, from the nostril downwards to the mouth, and the flaps were then separated on each side from the gum, so as to afford free space for examining the attachment of the tumour. It then appeared that the growth proceeded from the septum by a narrow neck not larger than a fourpenny piece, immediately above the connection of the cartilage to the bone, and that there was consequently no difficulty in completely rooting out the disease. I cut through the septum a little way above the lower margin, so as not to interfere with the columna, divided the bone with pliers, and separated the remaining cartilaginous attachments. The surfaces of the wound were then brought together, after torsion of the coronary arteries, and retained by stitches of the interrupted and twisted suture. In the course of a few days, there was hardly any perceptible trace of the operation, and the patient has since continued perfectly well."

* See Archives Générales de Médecine for August, 1840.

These are the only three cases of this operation, as far as we know, on record. Two by Professor Syme, and one by M. Flaubert; they have all been successful, and they are all original. In some particulars they are similar, and yet they are all different. The bones in all the cases were perfectly sound. They are different from what are understood by the upper jaw operations as performed by Gensoul and others of Europe, and many surgeons of our own country, in which there is disease of the bony structure, and generally malignant. The present operation we think ought to be denominated the nasal, to distinguish it from the ablation or exsection of the upper-jaw for malignant disease of the bone or antrum, or both.

My operation was performed without the knowledge of either Syme's or Flaubert's, and appears to me to be more extensive than theirs, and is as follows:

Augustus McBurth, cabinet-maker, aged 32, born in Schoharie county, New York, ten years ago felt a stoppage in his left nostril, accompanied with a dull aching pain, which was much aggravated on taking cold. About one year from the commencement of these symptoms, a tumour made its appearance in the nostril of the same side. At first it was of a deep red colour; but it gradually assumed a lighter hue, and would occasionally project beyond the anterior opening of the nasal fossæ, especially in damp weather. At this stage of the disease he came to this city, and placed himself under the care of a surgeon, who made several attempts to remove it by forceps; but such was the hemorrhage that accompanied each attempt, that it was deemed unsafe to make any further trials to remove it. After remaining in the city three days, he went to an adjoining state, where several trials were made to remove it by means of a ligature; but as each unsuccessful effort seemed to impart only fresh vigour to its growth, he determined to submit to no further treatment, except to have portions of it removed from time to time, when it should become inconvenient from its size. In 1836 he removed to this city, where parts of it were from time to time removed by forceps and ligature, each attempt being attended with much pain and hemorrhage. His sufferings had now become so exceedingly acute that for one year he could not sleep in the recumbent position. There was a feeling of distension conveying the sensation of a wedge forcing forward the jaw bone. In March, 1841, he gave up his business, and urged by the intensity of his sufferings he was induced to submit to one more trial for its removal by ligature. The wire was in his nose for 11 days, but no benefit resulted from its application. He thinks that from first to last, at least 500 attempts were made to remove it, by about 50 practitioners. In June he applied to me for relief.

The tumour anteriorly and posteriorly, was so firm and dense that very little impression could be made upon it by forceps when firmly grasped. After trying several times to get a wire through the nose about the posterior part of the tumour, and getting firm hold of the anterior part with forceps,

and the part below the palate with the vulsellum, without being able to make the least impression on it, I determined upon the following operation. Having for years been in the habit of recommending a similar one for the removal of the inferior turbinated bone, when affected with carcinoma.

On *July 8th*, 1841, I commenced an incision through the soft parts a little

Fig. 1.

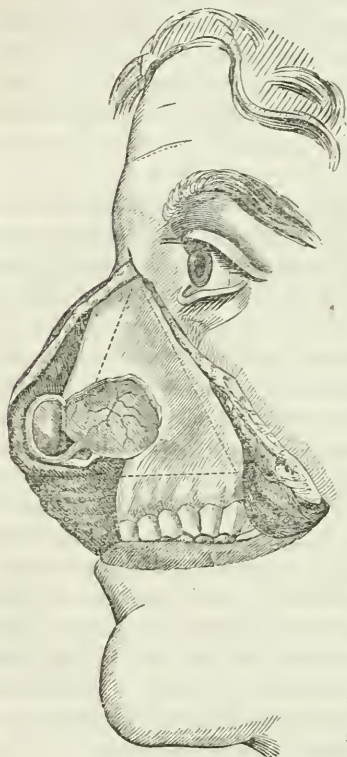


Fig. 1 gives a good view of the direction of the incisions in the soft parts, with the cheek turned aside. The dotted lines indicate the course of the sawing of the bones.

The posterior attachments could be liberated. These having been detached, the larger portion of this extensive disease, which passed into the pharynx and completely plugged up the posterior nares, was removed by introducing through the mouth a large curved vulsellum and forceps, and seizing the mass as it descended into the pharynx.

After the operation gave sol. sulph. morph. gtt. x. Evening.—Comfortable and complains of little pain.

9th. Had slept well, and is much pleased with the freedom of breathing;

on the side of the mesial line of the internal angular process of the os frontis, and extended it downwards to the upper lip, which was divided about three lines from the angle of the mouth. Two flaps were then reflected: the inner including the cartilaginous parts of the nose, and the tissues covering the os nasi of the left side; the outer laying bare the bone as far as the infra-orbital foramen. The anterior part of the tumour was now somewhat more distinctly seen, and the nasal cavity was farther exposed, by sawing vertically through the os nasi, as far as the transverse suture, so as to avoid the descending plate of the ethmoid. The superior maxillary bone was now divided in a line from the upper part of this cut to a point opposite the second bicuspid tooth, and on a level with the floor of the nostrils. Another section was made from the termination of the last, extending horizontally inwards towards the vomer. The osseous parts comprising the os nasi, a considerable portion of the superior maxillary bone, and the os spongiosum inferius were then detached.

The connections of the tumour were partially separated; but the disease was so extensive, that a part had to be removed through the anterior opening, before the

posterior attachments could be liberated. These having been detached, the larger portion of this extensive disease, which passed into the pharynx and completely plugged up the posterior nares, was removed by introducing through the mouth a large curved vulsellum and forceps, and seizing the mass as it descended into the pharynx.

After the operation gave sol. sulph. morph. gtt. x. Evening.—Comfortable and complains of little pain.

9th. Had slept well, and is much pleased with the freedom of breathing;

no febrile excitement; pulse only 69. Comfortable in every respect, and does not complain of soreness of the wound, around which there is but little swelling; has taken some chicken broth; bowels not having been moved, ordered an enema.

10th. Had slept tolerably well; but at intervals during the night suffered considerable pain; some tumefaction of the face to-day, but not more than is usually attendant on an operation so severe. No febrile excitement, pulse being only 60, but somewhat wiry; free evacuation from the enema last evening; another enema ordered; diet light.

11th. Passed the night well; feels comfortably; swelling of the face less; and complains of nothing but a stoppage of the nostril, caused by a slight oozing of blood; pulse 62; bowels have been naturally moved; allowed to take any light nutriment.

12th. Symptoms as yesterday.

13th. Feels comfortable in every way; swelling of face disappearing; appetite good; has slept well during the night; pulse 64; bowels free.

17th. Pulse 64; appearance in all respects greatly improved; tumefaction of the face has very much subsided; removed the dressings and took away the sutures; wound entirely healed by adhesion, except at the points, where the ligatures remain; reapplied short strips of adhesive plaster.

22d. Removed the plaster and pulled away the three ligatures. The patient feels desirous to go out, and expresses great gratification at his entire freedom of breathing, and rapid progress towards recovery.

May 29th, 1842. There is no appearance of any return of the disease, and the patient enjoys better health than he has done for ten years, and works at his trade.

The accompanying figure (fig. 2) is an accurate likeness of the patient, taken from the life; and the line of the cicatrix in the soft parts as exhibited at the present time, July, 1842.

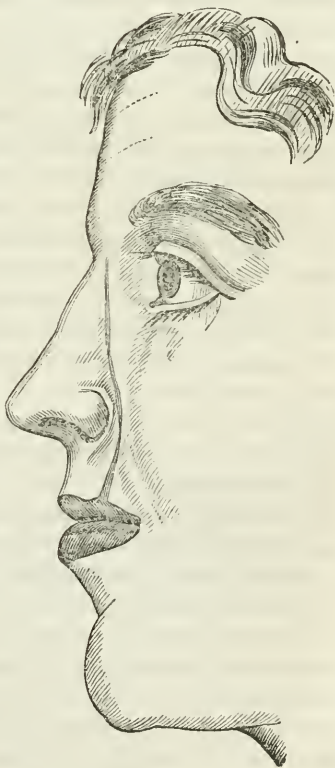


Fig. 2.

NEW YORK, Oct. 20th, 1842.

ART. VI.—*On the Meteorology of Hemorrhage*.—By B. F. JOSLIN, M. D.,
of the City of New York.

MEDICAL and meteorological studies bear some resemblance to each other in the complexity of the subjects and the difficulty of establishing complete and comprehensive theories.

Medical meteorology combines difficulties inherent in both classes of sciences; and though destined at some future time to be a science of great interest and importance, it is at present, and is perhaps for a considerable period longer to be, in a condition which may be termed fragmentary.

In the hope of adding a fragment to those already collected, I have endeavoured to examine a limited portion of this extensive field.

The object here proposed is to examine among the various causes whose combined influence determine the time when a spontaneous *hemorrhage* shall occur; whether the condition of the atmosphere has an influence so great as to be detected by a careful comparison of medical and meteorological observations.

In the course of a medical practice of fifteen years, and the daily observation and record of meteorological facts during the greater part of this time, the writer has become so far convinced of the existence of such an influence, as to induce him to undertake the labour of making a numerical estimate for obtaining the average results in relation to a considerable number of cases.

The examination has been restricted to cases of hæmoptysis and uterine hemorrhage occurring in his own practice, and from lack of time, and the great labour required for calculating the mean meteorological results for all the months and years up to the present time, those three continuous years in which the meteorological observations were more nearly complete, have been selected. This period ended in May, 1837. The locality was Schenectady, New York.

Of the cases of hæmoptysis and uterine hemorrhage scattered through these three years, those only have been selected whose date was recorded; they amount only to fifty-four. In two or three of the cases selected, there may be a slight uncertainty as to the day of attack, but in nearly half of them the hour of attack was recorded.

A few remarks may be indulged in respect to the rules and principles by which the estimate was made.

The selection of cases has been determined solely by the degree of evidence as to the exact day or hour of attack; and to avoid any bias from preconceived opinions, the selections have been made previously to consulting the meteorological journal. In but one instance has an exacerbation, or an attack within two days of a previous attack of the same patient, been included.

The mean dew-point of each day of attack has been selected as the dew-

point for the time, and compared with the average for the corresponding month. As the changes of *season* have comparatively little influence on the mean monthly atmospheric pressure, the mean height of the barometer for the corresponding *year* has been taken as the standard with which to compare the height as observed at the hour nearest that of the attack, or, in case of uncertainty as to this, the mean height of the day. For times when this instrument was exposed to considerable changes of temperature, a correction for temperature has been generally made. In regard to rain or snow, where either the hour of its occurrence or that of the attack was unknown, there no attempt has been made to arrive at the probable *fractions* of a day.

No attempt is here made to distinguish between the effects of rain and those of snow. Indeed, this distinction for all purposes of medical meteorology, is frequently more apparent than real. What falls as rain at the earth's surface, is frequently the product of melted snow. Meteorologists seem rarely to reflect on this fact, but, on the contrary, erroneously attribute the formation of snow to the congelation of clouds or of rain. For want of a more appropriate word in our language to express the descent either of snow or rain, the term storm, or falling weather, will be sometimes employed; and those days will, for the sake of brevity, be called stormy days, on any part of which rain or snow fell.

For the purpose of examining the influence of rain and snow, and of the barometrical and hygrometrical conditions and changes of the atmosphere, the tables have been arranged in fourteen columns. The first shows the number of the case and the date of attack; the second column shows the number of stormy days immediately preceding each day of attack or commencement of hemorrhage; the third the number of the days immediately succeeding the day of attack; the fourth column the proportion of stormy days in the corresponding month, expressed in hundredths, the whole number of days in the month being taken as unity; the fifth column the number of days (and fractional parts when known) between the commencement of the hemorrhage and the nearest preceding day, or part of day, of storm; sixth, the number of days which elapsed between the time of attack and the next succeeding storm. Hence O in both these columns signifies that the storm existed at the hour, or at least on the day, of attack. The seventh exhibits the condition of the atmospheric pressure on the day, and, as near as practicable, on the hour of attack, as compared with the pressure twenty-four hours previous. The eighth exhibits the same thing for the time of attack; *i. e.*, shows whether the barometer was rising, falling, or stationary, according to the evidence afforded by the next succeeding as compared with the next preceding observation of the same day. In the ninth and tenth the barometer is compared with the mean, in terms of hundredths of an inch, above or below. The eleventh column exhibits the dew-point on the day of attack; the twelfth the mean dew-point of the month; the thirteenth the difference between the dew-point and temperature of the air for

the day, and the fourteenth the same for the month. All the columns are complete except those for dew-point, which could not be conveniently obtained for the colder months. This has been given for thirty-three cases. The first table exhibits the results for uterine hemorrhage, and the second for hæmoptysis.

Results. Season and temperature. In examining the results let us first inquire the influence of season. The months in which the greatest number of cases occurred were June and September, hæmoptysis taking the lead in the former, and uterine hemorrhages in the latter. It would seem that neither the extreme of heat nor that of cold is among the most influential causes. Whether change of temperature at the time has an influence, is a different inquiry; and by examining the dew-point, and the difference between it and the temperature, it is seen that some depression of temperature is a usual concomitant of hemorrhage. The average depression of the thermometer below the monthly mean was 3° , but the fall was greater for hæmoptysis.

The hygrometrical state of the air may be next examined; first, in relation to the dew-point, which affords a measure of the absolute quantity of contained vapour; and secondly, in relation to the difference between the dew-point and temperature, which affords a measure of the degree of dampness, in other words the degree of approximation to the point of precipitation.

Now the average dew-point for the whole collection of cases is about 3° below that of the corresponding months. The air then, at the earth's surface, contained less than the usual amount of vapour. We are not to conclude that the air possessed a more desiccating quality; for the average difference between the dew-point and temperature (taking into account the relative number of the two kinds of cases) differed but one-tenth of a degree from the monthly mean. The average dampness for each class of hemorrhage was near the usual standard, but was rather greater for hæmoptysis. As the average dampness for both classes collectively was almost exactly the same as that for the corresponding months, there is no evidence that dampness *per se* has any influence on hemorrhage. As to the absolute height of the dew-point, there was a close agreement between the two classes, each giving (within one-third of a degree) a difference of 3° from and below that of the month. Here then, there is something which appears to be conducive to hemorrhage in general; but when we recollect that there was a corresponding depression of temperature, which leaves the dampness unchanged, and also that great cold has of itself little predisposing influence, we become, in the present stage of the inquiry, restricted to the conclusion, that that atmospheric agency, which conduces mainly to hemorrhage, is neither dryness nor humidity, nor heat nor cold, but some change or condition—whatever it be—which, on an average, is attended by a reduction of temperature and such a corresponding diminution of vapour as leaves the degree of humidity nearly unchanged.

Atmospheric pressure next claims attention, being, like temperature and humidity, one of the less complicated phenomena, and the subject of instrumental measurement.

The barometrical results were more remarkable than the thermometrical or hygrometrical ones, and very different in some respects from what generally received opinions would lead us to anticipate.

If we regard the average changes of pressure during the twenty-four hours preceding the time of attack, we find nothing remarkable, unless it be a remarkable want of influence, shown by a strict conformity to what the theory of probabilities would require for the average results of accidents in a numerous collection of cases. In other words, the instances in which the barometer was rising were nearly equal to those in which it was falling; and this correspondence extended to both tables. Before the uterine hemorrhages, the barometer was rising 13 and falling 14 times; and before hæmoptysis, the proportion was also 13 to 14. This shows, if any thing, a slight tendency to depression, but not sufficient to justify any general conclusion for this number of cases.

The case is different for the days of attack. On those the barometer was generally falling, and in a greater proportion of instances than could, with any probability, be attributed to accident. Out of 54 cases, it was in 35 falling at the time of attack, in 18 rising, and in 1 stationary.

Hence the probability that the atmospheric pressure shall be diminishing rather than increasing at the time of an attack, is about as TWO TO ONE. A confirmation of the opinion that the barometer will generally be found falling at or near the commencement of a hemorrhage, is found in the fact that the proportion was almost exactly the same for both classes of hemorrhage, being 17 to 9 for the uterine, and 18 to 9 for the pulmonary. It is difficult to believe that this falling of the barometer was accidental, when the proportion was so great and so nearly correspondent for both kinds of hemorrhage.

If this great influence of a diminution of atmospheric pressure be mechanical, we should be inclined, *à priori*, to anticipate that the effect would be at the maximum when the pressure was at a minimum, and the blood vessels in an unusual degree deprived of this external and mechanical support.

But it is interesting to notice, that the facts exhibited in another column contradict such a conclusion. The barometer, though generally *falling*, is *not low*, but on an average about one-third of a tenth of an inch *above* the mean height for the year. That the existence of some excess above the mean was not the accidental result of a moderate number of cases, appears probable from the fact that the two classes of hemorrhage differed in this respect from each other, only about one-fourth part as much as one of them differed from the general average of the year.

Instead of the number of times above and below, the average height has

been selected, as being less liable to vitiation by errors as to the exact time of attack, or the exact barometrical heights, whether mean or particular.

If we select those cases which are unexceptional as to reliance on small differences, for example, those whose exact hour of commencement was known, and was between sunrise and 10 o'clock, P. M., between which times the barometer was consulted, we find it to have averaged about one and a half tenths above the mean, for each class of hemorrhages, and for each to have been two or three times as often above the mean as below it. The range was from only a twentieth of an inch below, to more than a third of an inch above.

From all the barometrical facts we may draw the conclusion, that at the commencement of hæmoptysis or uterine hemorrhage, *the barometer is generally falling*, and from *some points above the mean*. There would seem to be, in general, some influence predisposing to hemorrhage, between the time of maximum and medium height, for that section of the month in which the attack occurs.

Falling weather remains to be examined. A storm of rain or snow is a complex phenomenon, and involves changes in those more elementary ones which have hitherto engaged our attention. It is generally preceded—frequently at an interval of some days—by an increase of atmospheric pressure, and a diminution of the dew-point; but, as the storm approaches, all these usually approach the mean, and pass to the other side before or after its commencement. It will be perceived that the state of things, so far as examined, which gives the hemorrhagic tendency, seems usually to agree with some part of this transition period.

Let us see how far this conclusion conforms to the observations on the times of hemorrhages and storms.

In the first place, the average time to the nearest preceding day of falling weather exceeded that to the nearest succeeding day; and, if we exclude the storms which occurred on the days of the hemorrhage, the average distance between the nearest past and future storms was about three-fourths of a day; the difference being, however, greater for uterine hemorrhages. The mean results at the feet of the tabular columns are deduced by including the stormy days on which hemorrhages occurred, which gives a less absolute distance, but the same disproportion between the distances to past and future storms; the ratio being as 35 to 26, for both classes of hemorrhages collectively. The disproportion is seen to be less for hæmoptysis than uterine hemorrhage, but the balance decidedly on the same side.

We see the same tendency by examining, in a different way, the number of times in which the nearest storm occurred after the uterine hemorrhage was to that in which it occurred previously, as 10 to 2. The proportion for hæmoptysis was 12 to 7, and for the hemorrhages generally as 22 to 9. The disproportion between the intervals to the past and future storms would

have been found still greater, and the above ratios also nearer to each other, had we excluded from the estimate those storms which were three or more days distant, and which on that account may be presumed not to have exerted a sensible influence.

These facts tend to the conclusion, that atmospheric condition of *the period preceding a storm* is more conducive to hemorrhage than that which immediately succeeds one.

A confirmation of this conclusion is found by comparing the three days which immediately precede the hemorrhage with the three which immediately succeed it. For the proportion of the former, which were stormy, was, for both kinds of hemorrhage collectively, only $36\frac{1}{2}$ per cent., that of the latter $51\frac{1}{2}$. The disproportion was greater for the uterine and less for the pulmonary, but still the balance was on the same side.*

Moreover, the hemorrhages usually occurred at the conclusion of several days which had presented less than the usual amount of falling weather. The proportion of days of rain and snow for the corresponding years was 44 per cent., for the corresponding months 45 per cent., and for the three-day periods preceding the hemorrhages $36\frac{1}{2}$ per cent.; for the three days preceding uterine hemorrhages 33, and for the three days succeeding them 59 per cent. Thus it was eminently the case with uterine hemorrhages, that they were *preceded* by an unusual amount of dry and *fair*, and *succeeded* by an unusual amount of *foul*, weather, the succeeding and preceding stormy days being to each other nearly as two to one.

We may conclude then, first, that the time of an attack of hæmoptysis or uterine hemorrhage is usually farther removed from the nearest preceding days of falling weather than from the nearest succeeding ones. It may be expressed by saying, that the attack is oftener *before* a storm than *after* a storm. Secondly. The stormy days which precede the hemorrhage are usually less numerous than those which succeed it, and indeed less numerous than for the same length of time in other parts of the corresponding month. Both these remarks are more strikingly exemplified in cases of uterine than in those of pulmonary hemorrhage.

On reviewing all the meteorological circumstances, we see the mean results, whether barometrical, thermometrical, or hygrometrical, all conspiring to point to a time of *transition* from a fair and *dry*, to a more foul and *stormy* period, or at least to a time characterised by great electrical changes, and especially to the development of much free electricity in the upper regions of the atmosphere, by the precipitation and even crystallisation of aqueous vapour. That an electrical, or what may even be termed, in many cases at least, a magnetic influence, and one which operates at a distance, is one of the most influential of the morbid agencies concerned in the above results, I am strongly inclined to believe.

* The separate results may be seen in columns second and third of table I. and II.

As the stages of disease and various internal and external circumstances must contribute to determine the precise time of an attack of hemorrhage, the scientific physician will not be surprised at the want of correspondence between the meteorological and medical results in many particular instances, but will be led by the former considerations to admit the reality and appreciate the importance of atmospheric agencies which, in spite of all other disturbing influences, still manifest themselves in the average results.

TABLE I.—*Uterine Hemorrhage.*

Number of Case.	Time of attack.	Number of days of rain or snow in three preceding days.	Number of days of rain or snow in three succeeding days.	Proportion in corresponding month.	Time to first preceding rain or snow.	Time to last succeeding rain or snow.	Barometer in preceding twenty-four hours.	Barometer at time.	Barometer compared with the mean.		Dew point for the day.	Dew-point for the month.	Diff. between dew point and temp.	Difference for month.
	1834.				deg.	deg.	F.	F.	above	below	deg.	deg.	deg.	deg.
1	May 29, A. M.	0	2	.51	0	0	F.	F.		20	50	42	6	16
2	June 8, 11 A. M.	1	1	.40	3	2	F.	F.		3	58	43	19	10
3	October 11,	1	1	.35	2	2	R.	F.	33			56		
4	Nov. 6, morning,	0	2	.37	9	2	R.	F.	23					
5	December 23,	2	3	.51	3	1	R.	R.	23					
	1835.													
6	April 2,	1	2	.53	0	0	F.	F.		23				
7	July 7,	2	2	.48	2	1	F.	F.		17	64½	62	9½	8
8	September 12, P. M.	1	2	.33	0	0	F.	F.	0	0	48	47½	9½	7
9	September 30,	1	2	.33	2	1	F.	F.		23	35	47½	9	7
10	October 5,	2	2	.29	0	0	R.	F.		5	46½	44½	2	5½
11	October 14,	0	0	.29	7	5	F.	F.	17		46	44½	4½	5½
12	November 9,	2	2	.60	2	2	F.	F.		6				
13	Novem. 11, 3 A. M.	0	3	.60	0	0	F.	F.		69				
14	Novem. 14, 9 P. M.	3	2	.60	0	0	R.	R.	12					
15	Decem. 4, evening,	1	2	.48	0	0	F.	F.		8				
16	December 11,	2	2	.48	2	1	R.	F.	59					
	1836.													
17	January 15, 4 P. M.	0	2	.48	0	0	R.	R.	4					
18	February 6,	2	2	.48	2	1	R.	R.	23					
19	February 13, P. M.	1	0	.48	0	0	F.	F.		13				
20	April 5,	0	0	.43	3	4	R.	R.	14		13½	30	10½	9
21	September 9, 3 P. M.	0	3	.50	0	0	F.	R.		2	51	52½	7	8½
22	Sept. 9, early A. M.	0	3	.50	4	½	F.	S.	0	0	51	52½	7	8½
23	Septem. 22, 2 P. M.	0	3	.50	0	0	F.	F.	6		59	52½	5	8½
24	Sep 23, 29, midnight	1	1	.50	1	3½	R.	R.		18	33	52½	10	8½
25	October 10, 9 P. M.	1	2	.55	3½	1½	R.	R.	37		27½	34	8	5
26	October 29,	1	0	.55	0	0	R.	R.		7	22½	34	15½	5
	1837.													
27	February 5,	2	2	.46	0	0	R.	F.	44					
Averages, - -		.33	.59	.46½	1.69	1.01	F. 14 R. 13	F. 17 R. 9 S. 1	Sum. 300 Mean 11	Sum. 219 Mean 8	43.3°	45.6°	8.9°	8°

TABLE II.—*Hæmoptysis.*

Number of Case.	Time of attack.	Number of days of rain or snow in three preceding days.	Number of days of rain or snow in three succeeding days.	Proportion in corresponding month.	Time to first preceding rain or snow.	Time to last succeeding rain or snow.	Barometer in preceding twenty-four hours.	Barometer at time.	Barometer compared with the mean.	Dew-point at time.	Dew point for month.	Diff. between dew-point and temp.	Difference for month.	
	1834.				deg.	deg.			above below	deg.	deg.	deg.	deg.	
1 May 20,		0	1	.51	0	0	F.	F.	15	50	42	6	16	
2 June 13,		1	1	.40	0	0	F.	F.		11	30	56	8	
3 June 18,		2	2	.40	0	0	F.	F.		34	55	56	3	
4 June 19,		3	1	.40	0	0	F.	R.		37	59	56	3	
5 June 23,		1	1	.40	2	1	F.	F.		12	61	56	15	
6 June 28, early A. M.		0	2	.40	0	0	F.	R.	10	52½	56	12	10	
	1835.													
7 March 4,		0	1	.29	4	3	R.	R.	54					
8 May 1,		2	1	.35	2	3	F.	F.		12				
9 May 4,		0	2	.35	0	0	F.	F.		19				
10 June 25, 3 A. M.		1	2	.53	2½	½	F.	F.		20	57	53	10	
11 September 18,		0	3	.33	4	1	F.	F.	17	54	47	6	8	
	1836.													
12 April 7,		0	1	.43	5	2	R.	F.	23	20	30	9	9	
13 June 24, noon,		2	3	.57	0	0	R.	F.	10	51	57½	10½	7	
14 June 27, 5 P. M.		3	2	.57	½	1	F.	F.		5	58	57½	6½	
15 July 18, P. M.		0	1	.35	4½	2½	R.	F.	23	54	60	12	11	
16 July 18, 4 P. M.		0	1	.35	4½	2½	R.	F.	23	54	60	12	11	
17 July 23, 2½ A. M.		2	1	.35	1	1½	R.	F.		15	54	60	8½	
18 Sept. 29, 3 A. M.		1	1	.50	1	3½	R.	R.		16	31½	52½	11½	
19 Sept. 30, 10 P. M.		1	2	.50	2½	1½	R.	F.	18	37½	52½	8½	8½	
20 October 7,		3	0	.55	0	0	R.	R.		8	37½	34	7½	
21 October 9, 10 P. M.		2	1	.55	2½	2½	R.	R.	29	33	34	7	5	
22 October 10, 6½ A. M.		1	2	.55	3½	1½	R.	R.	32	27½	34	8	5	
23 November 2, 7 A. M.		0	0	.47	4½	8½	F.	F.	0	0				
24 Novem. 27, 9 A. M.		3	1	.47	¾	2½	R.	R.	6					
	1837.													
25 February 9,		2	1	.46	1	3	R.	F.	24					
26 February 10, 9 P. M.		1	1	.46	2½	1½	F.	F.	13					
27 April 30, 7 A. M.		1	1	.40	0	0	F.	F.		4				
Averages, - -		.40	.44½	.44	1.78	1.61	F. 14 R. 13	F. 18 R. 9	Sum 297 Mean 11	Sum 193 Mean 7	47.3°	50.2°	8.6° Mean	9.3° Mean

ART. VII.—*Plastic Operations.* By J. PANCOAST, M. D., Professor of Anatomy in Jefferson Medical College. Lecturer on Clinical Surgery at the Philadelphia Hospital.

In the last No. of this Journal I offered some general observations in reference to the different methods employed in Plastic Surgery for the reconstruction of lost parts, and related some cases illustrative of their application to the restoration of the Nose. I shall now detail the results of some operations exhibiting the further application of the principles involved in those processes, to the restoration of lost portions of the external Ear, of the Eyelids, and Lips.

Otoplasty.—The art of restoring portions of the external ear, is as old as that of the re-formation of the nose. No attempt has perhaps ever been made to re-construct an ear entire, and it is very questionable if the trial was made, that it could, from the peculiar formation of the organ, be attended

with any satisfactory success. Where the destruction of parts is limited to the pinna or lobus, there is a base left for the engraftment of flaps. Under such circumstances the operation has been attended with success. The only form of plastic operation applicable here, is the Indian, the flap being taken from the neighbourhood of the mastoid process or from the front portion of the temporal bone. This mode was practised by Taliacotius himself, of which drawings are given in his work *De Curt. Chirurg. per Institutionem*.

CASE.—Sarah J. Morris, residing at No. 8 Jay street, a patient preparing to have a new nose made after the Italian method, brought to-day, July 26, 1842, to the clinique of the Jefferson Medical College, her son, ætat. 8, the left side of whose face had been deformed by an extensive burn, three years ago. The lobe and tragus of the ear, and the skin covering the ramus and part of the base of the jaw were involved in a common cicatrix. The pinna was drawn close to the head, and the lobe from the destruction of the skin on its posterior surface, was lost in the common covering of the face and neck. The operation was performed before the class as follows:

A piece of integument somewhat larger than the natural size of the lobe,

Fig. 15.



was marked out with the scalpel in front, as seen in the cut. A semi-circular portion of larger size, but narrowed where it touched the posterior part of the cicatrix, was dissected up from over the insertion of the sterno-cleido-mastoid muscle. A sharp pointed bistoury was then passed under the front portion, so as to raise it with a single sweep of the instrument. The everted edge of the tragus was then loosened with the knife, the raw surface below, which was of considerable size, bled freely from two small arteries, that did not, however, require ligatures. The margins of the wound were brought together with two hare-lip sutures and a strip of adhesive plaster. The

posterior flap was then brought round in front, under the anterior, and the edges fastened together with two stitches of the interrupted suture. The parts then presented a good appearance; the lobe being made larger than was natural to admit of the shrinking which must necessarily follow. The lower part of the ear which had been strained downwards by the cicatrix, retracted when loosened by the steps of the operation, to very nearly the natural length.

July 29th. The pin and sutures were removed. Union had taken place by first intention but to a small extent on the side of the neck. Partial

union had occurred between the flaps of the new formed lobe. The parts were dressed with adhesive plaster. And now, Aug. 11th, have almost entirely closed. The lobe is a little tumid, but well shaped, and the ear presents an appearance but little different from that of the opposite side.*

Blepharoplasty.—The restoration of an eyelid which has been partially lost, or the entire reconstruction of a new one, is required under the following circumstances.

1st. In extremely bad cases of ectropion, the consequence of a wound or ulceration of the integuments; or of a cicatrix, following an extensive destruction of the skin and its subjacent tissues from scrofulous ulceration, carbuncles, or erysipelas; where the ciliary margin of the lid and the tarsal cartilage have not been destroyed, but so drawn off from the orbit, as to leave the eyeball exposed, and the everted fungous palpebral conjunctiva strained over the margin of the bone occupying the ordinary position of the skin. This destruction of tissue and eversion of the mucous membrane, may be partial, as when the cicatrix is formed on the side of the temple, or it may extend to the whole lid, as usually occurs when there has been an extensive destruction of integument, over the eyebrow, or malar bone. In some instances, the deformity has been seen to exist in both lids of one eye at the same time. In cases of this description, beyond the prospect of cure by the usual operation for ectropion, a plastic process, modified to suit the necessities of each particular case, may be practised with success by the surgeon.

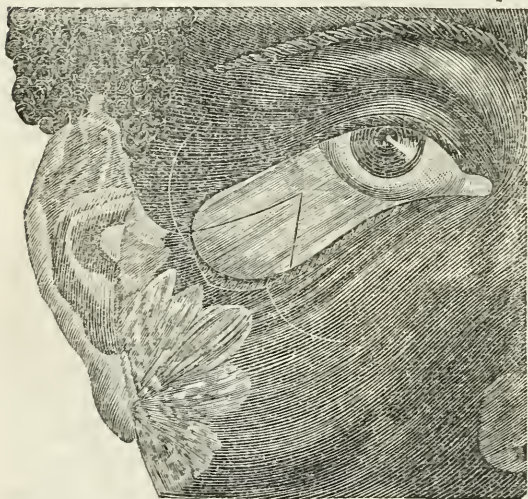
2d. In cases where there has been a loss of the whole substance of the lid—skin, muscles, cilia, and cartilage, and in consequence the eyeball left exposed and liable to destruction by inflammation. The lid must be supplied entire, in instances of this sort, by transferring in front of the ball a portion of the surrounding integuments, by one of the three principal plastic processes already described in the preceding number. We may diminish by this means the deformity, protect and save the eye; but it is impossible to give a mere transplanted flap of skin the numerous offices of a natural eyelid. If it be the upper lid that has been restored, it must of course be immovable, a mere membranous curtain hung in front of the ball. If it be the lower, in which there is usually but little movement, the operation will be far more satisfactory.

CASE I.—Rachel Morris, a coloured woman, ætat. 33, had suffered when 20 years old, with a scrofulous affection of the glands of the neck, which was attended with subcutaneous abscess, and extensive ulceration of the integuments in front of the right ear. She recovered with a rugous mottled cicatrix, extending from the upper part of the concha of the ear to the base of the jaw, and from the outer canthus of the eye to the upper extremity of

* Under the judicious management of Dr. Charles Huston, the ear by the 1st of September, was brought into so good a shape, as not to be distinguished in that respect from the other.

the sterno-cleido mastoid-muscle. The ulcerated surface closed, as in a burn, with a great retraction of the healthy skin. The external canthus was drawn outwards and downwards; the upper lid was shortened and held nearly immovable over more than the upper half of the orbit. The under lid was drawn outwards and downwards, so that the external two-thirds of its mucous covering rendered rough and fungous by the exposure, was strained over the margin of the orbit, so as to become the covering to the malar bone. The internal third of the lid was thrown forward upon the cheek, by the diseased and thickened roll of conjunctiva behind it. There was a constant discharge of the lachrymal fluid mixed with pus. The cornea, from exposure, had become hazy, so as to render vision in this eye imperfect; and the patient, unable to get employment as a house-servant, had come into the hospital for relief. March 5th, 1839, I restored the lid before the hospital class, to its proper position, by the following operation:

The V incision of Sir Wm. Adams, was made as seen in the cut, through
 Fig, 16. the substance of the lid.



The rounded and protuberant conjunctiva was removed with the hook and scissors, up to the inner canthus of the eye. The lower lid was loosened from its morbid attachment to the margin of the orbit, and an attempt made as in ordinary tarsoraphy to bring the divided edges of the lid together. This could not be accomplished in consequence of the extreme degree of tension with which the integu-

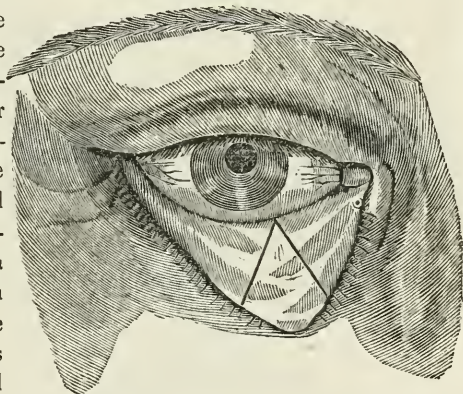
ments had been drawn downwards by the cicatrix. Two crescentic incisions were then made, each about three quarters of an inch long, from the lower apex of the division of the lids: one sweeping upwards and forwards towards the eyebrow, the other downwards and forwards toward the nostril. The triangular portions of skin and subcutaneous tissue, were loosened with a few strokes of the scalpel, the upper lid pushed up to its proper level, and the two flaps drawn upwards and forwards upon the ball of the eye, and fastened together with two of Dieffenbach's sutures. The lid was completely restored. The elliptical wound which was left was nearly closed by a hare-lip pin, and a strip of adhesive plaster. A compress and bandage were applied over the eye, and kept wetted with cold water.

On the third day the wound was dressed and the pins removed. There

was a good deal of tumefaction of the lid, and some suppuration from its free surface. The upper pin of the lid, and the pin upon the side of the temple, had partially cut out. Nevertheless union had taken place, by first intention, over about half the elliptical wound, and rather more than half the divided edge of the lid. By the use of adhesive straps, mild astringent lotions, and a gentle compressing bandage, the cure was complete in sixteen days. The lid retained its position, and was perfectly natural in appearance, with the exception of a slight tendency to eversion at the outer canthus, caused by the failure to procure union by first intention in the elliptical wound, and the contraction which necessarily followed its cicatrization.*

CASE II.—J. P. Jr., a bookseller, in Third street above Noble, ætat. 45, was affected with gangrenous erysipelas of the left side of the face, in June, 1840. A large portion of the integuments in front of the malar bone was destroyed. He was judiciously treated by Dr. Charles Noble of this city; but it was found impossible, as cicatrization of the extensive ulcer took place, to prevent the drawing down of the lower eyelid, so that its

Fig. 17.



mucous membrane took the place of the skin, covering the lower margin of the orbit. The cut represents well the appearance of the parts. The lower part of the eyeball was left uncovered. The upper lid for the protection of the ball, was held down lower than on the opposite side; the ocular conjunctiva was red and tumid, and though the cornea was uninjured, the eye was so irritable that he was compelled to keep it covered with a shade. A few cilia were yet remaining along the margin of the everted conjunctiva, which was continually covered with a puruloid secretion.

May 29th, 1841. With the assistance of Dr. Brooks, of Wheeling, and Dr. Mœhring, of this city, I proceeded to the following operation:—The ordinary V incision was made, as seen in the cut, with the base resting upon the ciliary margin of the deformed lid. The rounded hardened fold of conjunctiva next the ball of the eye was removed with the forceps and scissors; the lid on each side of the excised portion separated from the margin of the orbit with a few strokes of the scalpel. An attempt was now made to raise the lid to its proper position, and bring the sides of the V incision together with the hare-lip suture. The tension of the cicatrix below was too great to admit this. A curved incision was then made through the skin, nearly concentric with the orbit. Two incisions that met below were dropped from near

* I am indebted to my friend, Dr. Perry, of Georgia, then resident surgeon, for the notes of this case.

the outer end of the curved one, so as to include a triangular piece of integument, which was dissected up and removed, as in Dieffenbach's operation. Two hare-lip sutures were made across this triangle, as seen in Fig. 18. As the sides of the triangle were brought together by the closure of the sutures, the margin of the lid above was at once raised up to its proper level. The two twisted sutures employed in the tarsoraphy were now closed, with the effect of turning the free edge of the lid in contact with the ball of the eye, and completely removing the deformity. Considerable

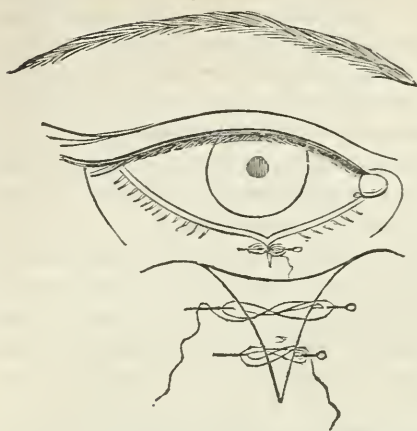
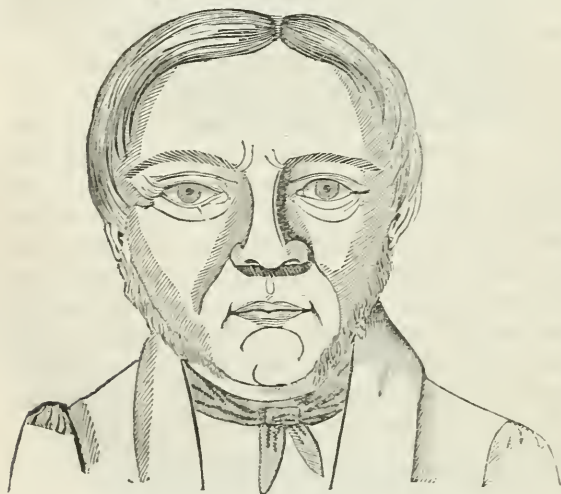


Fig. 18.

blood flowed during the operation. A compress and bandage was applied over the parts, and the patient confined to a dark room; lead-water and laudanum was applied to the eye. On the second day some erysipelatous inflammation followed; the patient was freely purged with calomel and black draught, and the astringent application persevered in, the proportion of the acetate of lead being raised to ten grains to the ounce. On the third day the pins were removed. The erysipelatous inflammation, which had considerably subsided, had served to prevent complete union by the first intention. It had taken place, however, at the bottom of the triangle, and at the lower half of the wound of the lid: the parts retained their position. The bread

Fig. 19.



poultice of Abernethy was laid over the parts till the tumefaction subsided; this took place at the end of forty-eight hours.— Adhesive strips were then applied to the lid and cheek, and a bandage and compress used to keep the lid turned upon the ball. In two weeks all was healed. The wound on the free margin of the lid closed up perfectly, but so as to

leave a slight break or depression. During the cicatrization of the wound of the cheek, the lid was drawn down, so as to be a little, but very little, lower than that of the opposite side; but it was in close contact with the ball; the tears found their way by their natural channel, the eye completely recovered its strength, the patient was freed from all inconvenience, and retained but a trace of his previous great deformity. Fig. 19 is a faithful representation of the appearance of the lid, the drawing having been taken more than a year after the operation.

Cheiloplasty.—The restoration of the lips when they have been in part or wholly lost, has been brought to a surprising degree of perfection within a few years past. It is not long since a loss of substance, sufficiently great to prevent the use of the common hare-lip suture, was thought to be beyond the resources of the art. Now there is scarcely any loss of substance, however hideous, of the mouth and lips, that cannot be remedied by the skill and ingenuity of modern surgeons.

Nearly all the forms of plastic operations have been applied in turn upon this region. Each has its application to particular kinds of deformity, and almost every new case that presents itself, has in it something peculiar, so as to require a particular exercise of the surgeon's ingenuity.

The different processes applied to the lip may be classed under four heads.

1st. The French method.—If the loss of substance is not very extensive, after the usual incision in V is made to pare off the edges of the cicatrised fissure, or for the removal of cancer if that is the cause of operation, the lamina on each side is to be dissected from the maxillary bone, till both, by gentle stretching, can be brought up in contact and secured with the twisted suture. This is always to be preferred when it will suffice without straining the lip too much inwards upon the teeth. But where the loss of substance is great, various modifications of this process are employed. In that of Chopart, two vertical and parallel incisions were dropped down from the ends of the V to the two ends of the base of the os hyoides. The intervening lamina was dissected from the jaw, down as far as the os hyoides, drawn up to the proper height, squared at its free surface, and fastened by the twisted suture to the sides of the remaining portions of the lips. Roux of St. Maximus modified this process by loosening the remains of the lip from the jaw bone, and continuing the dissection down to near the os hyoides, then stretching the integument loosened subcutaneously, like an apron, up to the proper level, flexing the head upon the neck at the same time. To facilitate this dissection in Roux's method, Lisfranc and Morgan have directed the integument to be divided in the median line, which is subsequently to be united by suture when the new lip is raised to its proper level. In the plans both of Chopart and Roux, the head must be held by bandages flexed upon the chest during the process of union, an inconvenient and painful position, and the difficulty which exists of maintaining it without motion, must necessarily be very liable to cause a failure in the operation.

The 2d process is that of the filling up of the breach in the lip by a transplantation of skin taken from the arm, as repeatedly performed by Taliacotius on the upper and lower lip; or a flap may be taken from the neck, as practised by Mr. Liston, the skin being dissected up, with a pedicle of attachment below the chin, and then twisted round and fastened by suture to the freshened margin of the lower lip. Besides other inconveniences resulting from this operation, the new lip thus made is thin and membranous, and remains so pale and withered, as to be neither sightly or serviceable.

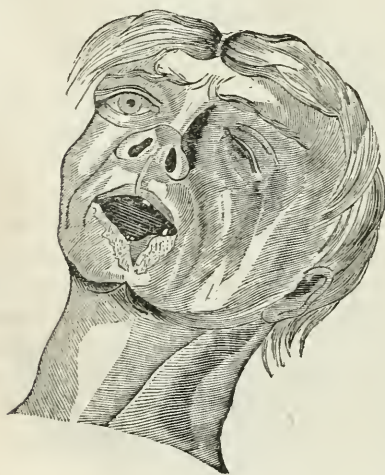
3d Process.—For this we are indebted to the boldness and ingenuity of M. Dieffenbach. Its object is to reconstruct a thick and serviceable lip, consisting of skin, mucous membrane, and intervening muscular tissue.

Upon the first and last of these processes only can the surgeon with any certainty rely for the restoration of a useful and well-formed lip. On the first, as suited to cases where the deficiency is not extreme; and on the third, when the loss comprises a large portion, or even the whole, of the lower lip. And the latter, in which there seems such free division of the cheeks, is not by any means so painful or protracted but that it *can readily* be borne.

These two processes will be illustrated by the following cases.

Abraham —, ætat. 40, was severely injured by the explosion of a cannon while in the act of ramming down the cartridge, on the 4th of July, 1836. His left arm was shattered, the left eye destroyed, the upper lip extensively cut, the lower lip violently contused and lacerated, and all the front teeth and sockets dislodged from the lower jaw bone. His arm was amputated, and he recovered well with the exception of the lower lip, of which there was so much loss of substance as to leave a deep gap to the left of the median line, as seen in the cut. Through this the saliva constantly dribbled, the tongue protruded, and in consequence his articulation was so indistinct as to be scarcely intelligible.

Fig. 20.



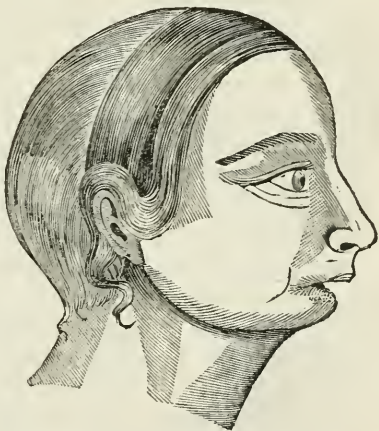
Nov. 1839. I operated in the Philadelphia Hospital for the removal of the deformity before the class. It was impossible to adjust the lips by the common hare-lip process. I removed, in a V shaped piece, the rounded edges of the cicatrix. Then, from four lines above the apex of the V, which was on a level with the lower surface of the jaw bone, I made two curved incisions in the direction of the extremities of the base of the os hyoides. The lips and integuments were next freely separated with the knife from the lower maxilla. The flaps were then rotated a little upwards, drawn inwards,

and united to each other on the middle line by two twisted sutures. The sliding of the flaps inwards and upwards brought near together the sides of the incisions below the chin. A couple of strips of adhesive plaster beneath the chin sufficed to close them. A compress covered with cerate and a few turns of the bandage for fractured jaw completed the dressing. Fig. 20 will serve to explain the plan of the operation. On the third day the first pin was removed, and the remaining one on the following day. One week from the day of operation he was discharged cured. The cicatrices were little apparent. The lip was well formed and full, with the exception of a slight break, made by the pressure of one of the teeth of the upper jaw.*

CASE VIII.—Miss Ann N. ætat. 20, a young lady from Virginia, entered the Philadelphia Hospital, Dec. 18, 1840, anxious for the removal of a deformity caused by gangrene of the lower lip when she was between two and three years old. Her health was good, her complexion rosy, and the upper part of her face exceedingly well shaped. The region of the lower jaw, seemingly from want of development, presented the appearance usual to persons of extreme age. This is tolerably well shown in the profile view, fig. 21. All the front teeth, with their

alveolar processes, had been removed between the molars of the two sides, and the jaw itself reduced to a narrow plate in front, where it was covered with nothing but closely adhering integument, discoloured and wrinkled, presenting much the appearance of a cicatrix following a burn. The whole lower lip had been destroyed; the destruction had even extended beyond the commissures of the mouth on each side, though it was greatest in the middle.

Fig. 21.

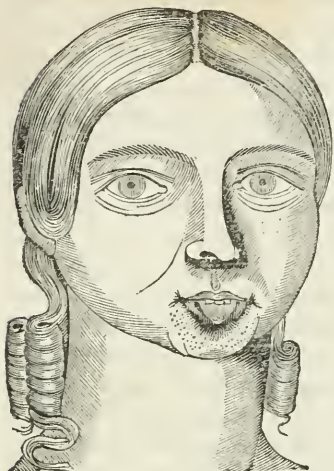


The resistance having been removed below, the levator anguli muscles had raised the corners of the mouth, giving an undue fulness to the cheeks unpleasantly contrasting with the chin. From the dense adhesion of cicatrix to the jaw the mouth could only be opened to a small extent, and when closed the chin moved up too far, and fell in completely within the range of the upper teeth, which were large and prominent. From the shortness of the jaw the apex of the tongue protruded through the opening, the saliva constantly flowed from the mouth, so as to compel her to

* For the notes of this case I am indebted to Dr. M'Pheeters, one of the resident surgeons of the hospital.

keep it commonly covered with a bandage, and her articulation was almost unintelligible to those not familiar with it.

Fig. 22.



The mouth is represented in its usual state in fig. 22.*

Of the two plans which appeared to me feasible for the cure of this hideous deformity—the French method, and that of Dieffenbach, the former was resolved on as being the least hazardous and severe, and which, if it failed to remove the deformity entirely, would, in all probability, diminish it so as to facilitate the cure by the latter process. The operation was performed very much as described in the preceding case, before the hospital class. In addition the commissures of the mouth were divided in order to give more breadth to the line for the formation of the lower lip. From the extensiveness of the cicatrised surface I was

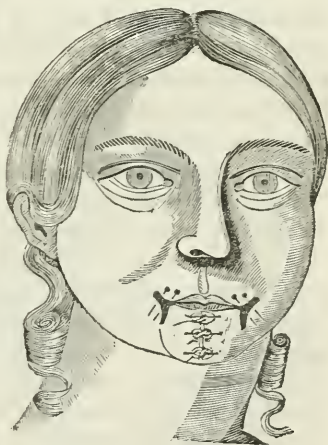
compelled to pass the pins through tissue that was not healthy in structure. From the same cause the parts that were brought together were so dense and unyielding as to make great tension upon the two upper pins. To relieve this, two incisions after the manner of Celsus were carried downwards from the corners of the mouth. Muscular tissue as well as integument were divided in the cut. This effected, to a considerable extent, the object desired. Nothing unusual occurred during the treatment of the case, except some hemorrhage on the fourth day from the right commissure, which was readily suppressed by the resident surgeon with a little powdered gum arabic and dry lint. On the third and fourth days the pins were removed. The upper pin had nearly cut out. Union by first intention had only taken place beneath the lower pin. The parts above were swollen and constantly moistened with saliva. Strips of adhesive plaster and elm bark poultices were applied, and from time to time the suppurating edges were touched with a zinc solution. Some further union of the parts occurred by granulation, and cicatrization took place, with a marked diminution of the fissure below, and a much greater fulness of the side portions of the lip, and without any impairment of the patient's health. The deformity, however, was still great. The patient, from the improvement which she already perceived had taken place, was anxious for the second step of the operation. This was undertaken, sufficient time having elapsed to allow the thickness and stiffness of the parts to subside resulting from the former operation.

Second operation.—The patient was as before seated upright in a chair.

* For the drawings from which these cuts have been made I am indebted to the pencil of Mr. R. A. Street.

The corners of the mouth were thrown widely open by an incision on each side three-fourths of an inch long, in the direction of the auditory meatus. A sharp-pointed curved bistoury was passed, for that purpose, through the cheek from the cavity of the mouth, and its whole thickness divided on each side at one cut to the commissure. From the distal ends of these incisions a descending cut was made on either side, with a single sweep of the bistoury, obliquely downwards and inwards to the top of the lower jaw bone. Two flaps were thus detached of the whole thickness of the cheeks, lined with skin on one surface, and mucous membrane on the other, and hanging from the chin by a pedicle five-eighths of an inch broad. The flow of blood was arrested in a measure on each side, as the division was made, by the thumb and finger of an assistant. In order to diminish the hemorrhage the horizontal and descending incisions were made on one side before the other was touched, and the divided vessels immediately secured by torsion and ligature. The flaps were then rapidly loosened from the gum on the inside, by a few strokes with the knife, and some few small arteries, which gave out blood, pinched and twisted. The loosened portions were then rocked over upon their pedicles towards each other, till their inner margins met on the middle line, where they were secured with three hare-lip sutures. The traction of the flaps caused the portion of the cheek in connection with the outer margin of the pedicle to advance forwards, so as to supply in part the place they occupied previous to their change of position. An irregular triangular opening was still left at the corners of the mouth. This was filled up by drawing the cheek from above downwards and forwards, and passing, on each side, two hare-lip pins, to connect the three sides of the triangle together. Though as much stress was put on the ligatures as was thought at all prudent, the orifice could not be completely closed, a small, triangular, fistulous orifice remaining. The immediate effect, in regard to the improvement of the features, was magical, and is well shown in fig. 23. The flaps of the new lip, which, as they were rocked inwards moved forwards in the direction of the line of their pedicular attachment, gave all the natural fulness and prominence to the lower lip. The descent of the protuberant cheeks restored, in a great degree, the natural roundness of the lower part of the face; and, from a disagreeable, the patient presented at once a comely countenance.

Fig. 23.



The operation, which was one of some magnitude, and somewhat protracted, was borne courageously by the patient; considerable blood was lost, and

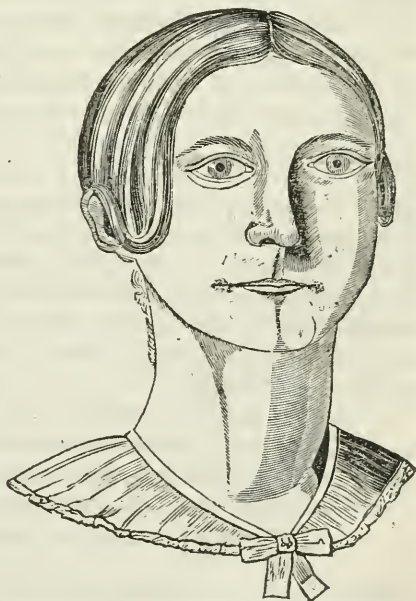
though she was seated in a chair, much annoyance resulted from its passing into the throat. The parts were supported with a compress and bandage, and my usual dressing of lead-water and laudanum applied. The patient was kept under the soothing and sustaining influence of opium, grt. xx. acet. opii being given by enema every four or six hours, according to the impression made on the system. Iced gruel was allowed for drink. She passed the following night very comfortably; little feverish excitement followed the operation. There was some discharge of blood into the mouth, which lodged there and became offensive. An increased flow of saliva followed, and dribbled out of the small unclosed openings at the corners of the mouth, and over the place of junction of the flaps in the middle line. This occurrence presents an obstacle to union by first intention, and makes operations on the lower lip far more difficult of management than analogous ones on the upper. The usual therapeutic treatment was employed, which it is not necessary here to particularise. On the third day the lower pin of the lip was removed; union had taken place here by first intention. On the fourth the middle pin was removed, as well as the upper, which was cutting out. No union had taken place below these pins, but the parts not being disposed to separate far, though swollen and everted, were easily held together by adhesive plaster; a solution of sulphate of zinc, to give tone to the swollen edges, and excite granulations, was applied. On the fifth day the pins were removed from the corners of the mouth; union by first intention had partially taken place here. An opening which would admit the end of the little finger existed, and through this there was a discharge of offensive bloody serum; but no sphacelation had anywhere occurred, except at the upper part of the left flap, where the pin had nearly cut out. The patient's health remained good. Nutritious broth and mulled eggs were allowed her for diet. The parts were well cleansed, washed with sulphate of zinc, and supported with adhesive plaster, and a few turns of a roller. On the sixth day the former treatment was continued, with the addition of an emollient poultice, to favour the growth of granulations; and by increasing gradually the strength of the zinc wash up to ten grains to the ounce, by the tenth day the middle line of the lip had closed completely, though the free edge of the lip was a little irregular. The corners of the mouth were not completely closed till the thirteenth day, and then by a growth of granulations which caused at this point a puckering of the cheek.

To remove the depression left by the cutting out of the pin, which caused the irregular line of the new lip, the apex was touched twice a day with a solution of arg. nitrat., gradually increased in strength, in order to close it up by forming a growth of granulations. This object was in part accomplished, but the margins of the depressions becoming cicatrised, they were shaved off with the bistoury, and the sides of the depression approximated with strips of adhesive plaster. This accomplished the object desired, and the lip was reconstructed perfectly, full, thick, high, with a red margin, and

level on the surface, with the exception of a little tuberculated prominence on the side, which was subsequently removed. The new lip projected about half an inch above the upper edge of the gum, but was everywhere adherent to the front surface of the gum and the maxillary bone, and consequently, though partly made up of the muscular tissue of the cheek, immobile. Allowing time to elapse, till all the inflammatory changes of the parts had disappeared, I separated with a scalpel the new lip from the gum and jaw, for the double purpose of rendering it mobile and removing the tension and depression at the angles of the mouth; this I believed would be effected by allowing the muscles of the cheeks to stretch it upon the sides, so as to remove the depression. Both objects were almost perfectly accomplished, and the patient was discharged from treatment, highly delighted with her improved appearance, the face being perfectly natural in profile, with a well-formed lip, which not only obstructed the flow of the saliva, prevented the protrusion of the tongue, but enabled her to articulate with much more and increasing distinctness: the only obvious peculiarity about the face being the cicatrix, and some remaining slight depression at the corner of the mouth. This, it is believed, will disappear in time; the hardened tissue around the cicatrix will become softer and more extensible, and the seam of junction, if it does not entirely disappear, will diminish in size, so that at a subsequent period it may be cut out with the knife, and the parts reunited by first intention, leaving nothing more than a common cicatrix like that following a simple incision. The patient was three months in the hospital, though a

Fig. 24.

great part of the time was consumed in allowing the necessary time to elapse between the first and second operation, so as to admit of practising the latter to the best advantage. This operation for re-supplying the whole substance between the mouth and chin, is one of very considerable difficulty, and requires a much greater exercise of skill, address, and ingenuity, than any plastic operation I have attempted, even that of the formation of a new nose. No one can appreciate the difficulties who has not made the trial. But the success in this case was gratifying to a degree, more than commensurate to the difficulty and delay involved in the case, as it restored an interesting young female to society with



scarcely a single remnant of her deformity to attract a stranger's attention. Fig. 24 represents well the features of Miss N., and was taken six months after the last operation. The new lip is movable, though not to the natural extent; the cicatrix on the cheek is now but little apparent, and her articulation, though a little thick, perfectly intelligible. I know not that this form of operation for the lip has been before performed by any other surgeon than Dieffenbach; but I am disposed to believe it, in cases demanding it, entitled to the high encomium which Zeis has bestowed upon it in his work on Plastic Surgery.*

ART. VIII.—*On the Signs of Pregnancy.* By T. ROMEYN BECK, M. D.,
Professor of Materia Medica in the Albany Medical College.

THE *Signs of Pregnancy* have been repeatedly noticed by different writers during the last and present years, and a condensed analysis of the principal facts, or rather novelties, mentioned by them, may be of some use, as well in *posting up* the information afforded, as showing how far we are to rely on the indications that have been proposed. Among the more elaborate papers to which I shall refer, are Lectures on the Signs of Pregnancy, by M. Dubois, published in the *Gazette des Hopitaux*, and a paper by James Stark, M. D. in the *Edinburgh Medical and Surgical Journal* for January 1842, on the signs of pregnancy during the earlier months of gestation, and on the existence of a new animal principle in the urine during that state. This last writer confines his remarks to the signs of pregnancy during the first three months.

1. *Peculiar Sensations in the Breasts.*—"In almost every case, shortly after impregnation, peculiar sensations are experienced in the breasts. These have been generally described as a sensation of creeping or formication, with a fulness and heat in the interior, and an itching over the surface." Dr. Stark adds, that he has frequently been informed by those who have borne several children, that this was the sign by which they were first made aware of another pregnancy, and that it occurred before the suppression of the menstrual discharge.

2. *Suppression of the Menses.*—Dr. Stark is of opinion, that, in some instances, the menstrual discharge continues for a few months after impregnation, while in others it does so during almost the whole of pregnancy. In two cases seen by him he has no doubt that the discharge was natural, and not to be distinguished from the true menstrual flux. "In one case, a scrofu-

* For the notes of this case, and most essential aid in its management, I am indebted to my friend Dr. Ludlow, one of the resident hospital surgeons.

lous woman, with red hair and fair skin, it continued always for the first three months after impregnation, and I witnessed this fact during three pregnancies. In the other case, the discharge was just as regular for seven months, when it stopped, but returned immediately on delivery. 'This woman was very swarthy, with black hair and eyes, and it occurred during two pregnancies. I have also seen coloured discharges attending the progress of pregnancy, but never was able to discover that they observed periodical returns.'" The reviewer of Professors Hamilton and Davis's works on midwifery in the same number of the Edinburgh Journal, although professing the greatest respect for the opinions of Hamilton, (who denied the possibility of menstruation during pregnancy,) arrives at a similar conclusion. "We believe, with Dr. Hamilton, that there never was, strictly speaking, such an occurrence, knowing as we do, that the true menstrual secretion proceeds from the interior of the uterus and Fallopian tubes, but we also know, that many cases have been recorded, on the most respectable authority, where a discharge much resembling the menstrual secretion continued during the whole of pregnancy, and more especially during the earlier months, which is an uncommon occurrence, and also that there are several cases on record where that function (menstruation) was alone performed when the females were pregnant."

"As pupils of the late Dr. Hamilton, we were deeply impressed with the truth of his convictions. But we were not long in practice before evidences so indisputable occurred, that it was impossible to withhold our belief that menstruation may occur during pregnancy."

3. *Breasts.*—*Areola.*—Almost immediately after conception the breasts enlarge, the glandular structure becomes developed, and one or more of the glandular lobules may be felt, hard, enlarged, and painful on pressure. The whole of these glandular lobules are not equally affected in a *first pregnancy*; in general two or three only in each breast. About the middle or end of the second month these hardened lobules become softened, and the breast presents a more uniform resistance to the hand. During the third month it gradually enlarges and milk begins to be secreted.

In women who have borne many children, and whose breasts remain flaccid, the only change observable at this period is, that the hardness of the lobular structure has disappeared, and that, though the breast remains soft and flaccid, milk may be drawn from the nipple (Stark). As to the changes in the *nipple* and *areola*, Dr. Stark concurs mainly in the correctness of those enumerated by Dr. Montgomery. The glandular follicles around the nipple become enlarged during the first month; but in a first pregnancy they are not found, presenting all their usual characters, until towards the end of the second month. They then assume, sometimes a paler, and sometimes a redder hue than the surrounding skin.

The change of colour in the areola commences at the end of six weeks, if the female be of a dark complexion, with dark hair and eyes; and the period

is later, according to the fairness of the skin. In all it is quite distinct by the end of the third month, but in neither is the tint so deep as after the fourth month (or the next menstrual period). These remarks apply only to a first pregnancy. In a woman who has borne children the areola, once produced, never entirely fades as long as she is capable of procreating. The glandular follicles, once enlarged, never completely disappear; and these, with the reddish white shining network of lines, form a union of signs which are produced by no known disease, and indicate unequivocally that the female has once been pregnant.

In a female who has had children and again become pregnant, the glandular follicles assume their enlarged appearance at the end of the first month. The areola also changes its colour nearly a month sooner, depending, however, somewhat on the nature of the complexion.

As to the objection urged by some observers, that the dark coloured areola may be present during certain diseases, and particularly of the uterus, while pregnancy is wanting, Dr. Stark remarks, that he has met with only three cases of this description, and here, although the coloured areola and nipple were present, yet there was no turgescence of the nipple, the areola was dry and wrinkled, and the glandular follicles were not enlarged. Lastly, he states, that, in some instances of pregnancy, there is an entire absence of all colour from the areola. In two cases then under his care, this was the fact, but all the other characters were well developed.

Such is Dr. Stark's testimony. The Edinburgh reviewer, whom we have already quoted, (vol. 57, p. 201,) distrusts the infallibility of most of these appearances. Dr. Hamilton placed great reliance on the turgescence of the areolar ring, yet, in a case quoted by the reviewer, this was actually present, with a dark areola, but no *enlarged glandular follicles*, and the patient proved not to be pregnant. She was indeed *menstruating* at this very time. The observations of Dubois are equally, if not more distrusting. The discoloration of the areola is often wanting in females of the fair complexion, and again it may be present, without impregnation. When the turgescence occurs, he fully agrees with Hamilton in deeming it a sure sign, but, unfortunately, in his experience it is rare, not having observed it in more than one case out of twenty. Lastly, the enlargement of the glandular follicles, so much relied upon by Montgomery, occurs but seldom, and he suggests that the subjects seen so frequently by the physician of Berlin (as he styles him) must have had some peculiarities which are not observed among the French. He even adds, that it occurs in females not pregnant, and is therefore disposed not to depend on any of these appearances taken separately.

4. *Abdominal Enlargement.*—This occurs very shortly after conception, and is then owing not to any increase in the size of the uterus, but to the sympathy of the stomach and bowels with that organ. This is manifested by nausea, vomiting and flatulent eructations, together with a windy distension of the bowels. It is rarely wanting during the first two months of

pregnancy; but while the abdomen is thus tumid, there is also a peculiar flatness over the anterior, and what would otherwise be, the most prominent part of the swelling. "This peculiar flat tumidity of the abdomen, is most observable during the first two months; and in general, after this period, disappears to such an extent as to make it doubtful if the person be pregnant." About the middle, and certainly at the end of the third month, a fulness at the lower part of the abdomen becomes manifest. (Stark.)

5. *State of the Uterus*.—"During the first two months, the volume of the uterus gradually increases; its body becomes somewhat rounded and inclined backwards, whilst its neck approaches nearer to the vulva, and comes more within the reach of the fingers." This is Orfila's description, and it corresponds with the observations of Dr. Stark. He also denies that the uterus actually descends into the pelvis during the first months. The sinking is only apparent, and has been correctly ascribed by Madame La Chapelle, to the increase in size of the fundus, which is as yet prevented from rising out of the pelvis.

Dr. Rigby, (Midwifery, American edition, p. 40,) suggests that the soft feel of the portio vaginalis of the cervix uteri, is one of the earliest signs. In the unimpregnated state, it is hard and almost cartilaginous to the feel. From pregnancy, it becomes softer and larger.

According to Dubois, the gradual obliteration of the neck of the uterus, so constantly mentioned by authors, is not invariable. P. Dubois examined the body of a female who died in the eighth month; and the neck was found as long as it is usually in the first month. Indeed it sometimes preserves its length throughout the whole period of gestation. A female presented herself at the Clinique in the last stage. P. Dubois found the neck but little shortened, and hence pronounced her wrong in her statement. Labour pains, however, soon came on, and these rapidly diminished the length of the neck, and were shortly followed by delivery.

6. *Motion of the Fœtus. Quickening*.—The earliest period at which this is felt, is the eleventh week. If a female asserts its earlier occurrence, she has been deceived. Dubois corroborates the statement, that it is sometimes not experienced throughout the whole term of gestation. This sign is, however, of little value in medico-legal cases. A suspected female will hardly speak of it while on examination; various diseases have been mistaken for pregnancy. (Dubois.)

7. *Lividity of the Vagina*.—This sign, which was brought into notice by Duchatelet, on the authority of Jacquemin, has attracted considerable attention. Dubois has never been able to satisfy himself of its value; but he candidly adds that his opportunities have not been similar to those of Jacquemin. He doubts whether it is an *exclusive* sign of pregnancy. It may be seen with a speculum immediately after the cessation of the menses; and again, it may be caused by several diseases. Dr. Malvani, on the other hand, at the meeting of the Scientific Congress, held at Turin in September,

1840, stated that he had found this lividity to be a constant attendant not only of pregnancy, but of the puerperal state. His situation as attending physician to a hospital containing females labouring under the venereal, gave him many opportunities of verifying the frequent occurrence of the sign. In some it was not very manifest, until after the second month of pregnancy.—(*Archives de la Médecine Belge*, vol. iv. p. 216.)

8. *Auscultation*. During the first ten weeks after conception, Dr. Stark has never been able to detect the *placental souffle*, but he has noticed it in the beginning of the eleventh, and very distinctly in every case that he has examined, towards the end of the twelfth week. This corresponds with the observations of Kennedy, although contrary to those of Montgomery and Velpeau. (Stark.)

According to Dubois, this sound is dependent on the circulation in the vascular tissue of the uterus. He therefore objects to the term in use, and prefers that of the *uterine souffle*. Consequently, he asserts that it changes its situation. Its intensity also is variable, being more marked on some days than on others; and during labour, it is enfeebled or suspended by the contractions of the uterus. It is ordinarily first observed during the fourteenth or fifteenth week, although it may be noticed earlier, should the fundus rise previous to that, above the upper brim of the pelvis.

Valuable as this sign is in early announcing the presence of pregnancy, Dubois is still not disposed to consider it an infallible one; but asserts that it occurs in cases where fibrous tumours are present in the cavity of the uterus, unaccompanied by pregnancy. The fœtus also may die during gestation, and the uterine souffle continue. The reader will observe that these statements necessarily follow as deductions from the cause assigned by our authors. On the action of the fœtal heart, (*doubles battemens*,) he relies much more strongly as a sign. He adds, however, nothing new to its history.

9. *State of the Urine*.—(A) Donné announced to the Academy of Sciences at Paris, in May 1841, that he had ascertained from a great number of experiments, that the urine of pregnant women contains much less uric acid, phosphate and sulphate of lime, than that of others not pregnant. (See *American Journal of Medical Sciences*, N. S., vol. iii. p. 218.) The inference is, that part of the calcareous salts commonly found in the urine, is required for the formation of the bones of the fœtus. M. Lubanski confirms this by his own experience. He sent the urine of a female, in whom neither the touch nor auscultation afforded any proof to Donné. The peculiarity was present, and in about a month afterwards the patient miscarried of an embryo of apparently the third month. In another instance Donné examined the urine of a female for a totally different object. He found the usual quantity of precipitate. A short time afterwards, repeating his experiments upon another specimen, he discovered a notable diminution in the precipitate. From this he suspected pregnancy, and the result justified his suspicions, for

she had an abortion three months afterwards. "All authors," says M. Lubanski, "who have written on embryology, consider ossification as taking place on the fifteenth or thirtieth day after conception. This new formation of osseous parts can only occur at the expense of the mother. It is therefore quite logical to endeavour to ascertain whether the calcareous salts of the urine of the mother are diminished."—*Annales D'Obstetrique*, quoted in the *London and Edinburgh Monthly Journal of Medical Science*, vol. ii. p. 206.

(B) *Kiesteine*. The number of this journal for July last, (*American Journal of Medical Sciences*, N. S., vol. iv. p. 13,) contains an interesting and valuable paper on this sign by Dr. Elisha K. Kane. The reader will find in it the results obtained by Nanche, Eguisier, and Golding Bird, followed by the observations of Dr. Kane on a greater number of cases than were noticed by all the preceding physicians. The whole paper deserves a careful perusal, and I will refer to only a few points particularly bearing on legal medicine. Out of 85 pregnant females whose urine was examined, he obtained a well marked kiesteine pellicle in 68; in 11 it was observed in a modified form, while in 6 it was wanting. Of these last, two were labouring under severe diseases. The cheesy odour was noticed in 7 cases only. Kiesteine was detected in one case by Dr. Kane as early as the fourth week, and in another before the fifth, while in several it was present before the end of the third month.

Having thus unequivocally proved its presence during pregnancy, Dr. Kane next proceeds to inquire whether it can be deemed diagnostic of that state, and peculiar to it. Without being aware of the results obtained by Mr. Letheby, (*American Journal of Medical Sciences*, N. S., vol. iv. p. 223), he confirms them in a striking manner. Out of 94 females in a state of lactation, 42 presented no indication of it, 8 a scum imperfectly modified, and 44 the perfect pellicle. This last occurred most frequently between the period immediately after delivery, and the free discharge of milk from the breasts. So, also, it was found when suckling was temporarily interrupted by local obstructions; and also of the above number 8 out of 10 females exhibited it at the *period of weaning*. The inference of Dr. Kane would thus appear to be well founded, viz., the kiesteine is not peculiar to pregnancy, but that it may occur whenever the lacteal elements are secreted, without a free discharge from the breasts.

In a few instances of advanced phthisis he observed a pellicle bearing some resemblance to kiesteine. Out of 30 cases, 4 were of this description. It is, however, much slower in forming than the pellicle of pregnancy. That occurs within a day or two.

Dr. Stark has also frequently noticed kiesteine during pregnancy, yet occasionally it was wanting, and particularly in the later months. He has observed it quite distinct at six weeks after conception.

I add, in conclusion, the following discordant results by (apparently) Ita-

lian physicians. Turchetti has repeated and varied Dr. Bird's experiments, and arrives at the following conclusions:—Kiesteine is found in the urine of non-pregnant as well as in that of pregnant women; it exists in women labouring under inflammatory complaints as well as in those in good health; it is seen both before and after puberty; it has in all cases the odour of caseine, but this is stronger in the urine of females who have reached the age of puberty; it is seen sometimes in females who are nursing, and lastly, it is never seen in the urine of men.

Dr. Cenni, on the other hand, has never found the kiesteine fully formed before the fourth day, and this applies equally to non-pregnant and to pregnant women. Its existence is not constant, and to find it, the urine must be kept either in a hot or a cold place. He also found it *in the urine of men, but here it does not cover the whole surface*. It has rarely, either in men or women, the odour of caseine.—*L'Examineur Médicale*, Oct. 3, 1841, quoted in the *London and Edinburgh Monthly Journal of Medical Science*, Dec. 1841.

(C) *Gravidine*. When the urine of a pregnant woman is allowed to stand for some time, it deposits a copious sediment of a white colour, and this is made within a much shorter time during the first four months of pregnancy than after that period. On collecting it, Dr. Stark was unable to detect the presence of either albumen or caseine in it by the ordinary tests, and yet he ascertained that if milk was added to the urine in considerable quantity, its caseine could be detected by acids. He also found that this peculiar matter could be completely removed from the other ingredients by agitating a portion of the urine with ether. After satisfying himself by a series of experiments that this sediment, thus separated, was not identical with either albumen, caseine, fibrine, or gelatine, he considers himself warranted in considering it as a new principle, to which he proposes the name of *gravidine*, both from its occurring during pregnancy, and its falling to the bottom of the vessel.

Dr. Griffith, of London, is the only writer, so far as I am aware, that has particularly noticed the observations of Dr. Stark. He denies the existence of this principle, and asserts that there is in the urine of pregnant women a large number of globules, while the deposit consists of lithate of ammonia. To the union of these perfectly distinct substances, and Dr. Stark's experiments on them, Dr. Griffith ascribes the results obtained. Both are insoluble in ether, but remain suspended in it by agitation. If the sediment be boiled in water, and filtered while hot, the lithate of ammonia will be obtained perfectly pure, and the globules can be washed off the filter. Dr. G. also endeavours to show, from the account of Dr. Stark's experiments, that the tests used by the latter gave the characteristic results of lithate of ammonia.

I may add that Dr. G., who informs us that he has for some time devoted himself to an examination of the urine in pregnancy, states that he has con-

stantly observed the caseous odour, so much so, indeed, that he considers it almost as characteristic as the kiesteine. "I think," he adds, "we can fully account for Mr. Letheby's getting a putrefactive odour, instead of the caseous, as he uses too high a temperature."—*London and Edinburgh Monthly Journal of Medical Science*, July, 1842.

On a review of the observations now collected together, it may appear to the superficial reader that a great uncertainty still exists concerning the signs of pregnancy. But let it be recollected, that most of those which have been noticed, occur in the earlier stages, precisely the period when doubts should always be entertained in medico-legal cases. The value of auscultation is, however, more and more appreciated, and, at advanced periods, actual examination of the parts seldom fails to indicate their real condition. The other signs are valuable as important accessory ones.

Cases like the following are scattered through the annals of criminal jurisprudence, and they teach but one lesson. "During the French Revolution, a young French countess was imprisoned on suspicion of carrying on a treasonable correspondence with her husband, an emigrant. She was condemned, but declared herself pregnant; two of the best midwives in Paris were ordered to examine her, and they declared that she was not pregnant. She was accordingly guillotined, and her body taken to the School of Anatomy, where it was opened by Baudelocque, who found twins in the fifth month of pregnancy."—*Rigby's Midwifery*, p. 98.

ART. IX.—*Remarks on a Species of Sore Mouth peculiar to Nursing Women.* By B. WALLER TAYLOR, M. D., of Monticello, Florida.

THIS disease, so far as I know, has never been noticed in any of the systematic works of the day, on the diseases incident to women; nor, indeed, has it been described at all until the year 1830, when Dr. E. Hale, Jr. published an interesting account of it in the Medical Communications of the Massachusetts Medical Society, which was copied in this Journal for April, 1842. In the number of this journal for January, 1841, we have the next account of this disease by Dr. Fred. F. Backus, of Rochester, New York, who states that he has met with many cases of this affection every year, during a practice of twenty-four years. Lastly Dr. Shanks, of Memphis, Tenn., has recently informed the editor of this journal that few nursing women of that town escape it, and in the No. for Oct. last he has given an account of the disease as it occurs in that city and neighbourhood. Having met with several interesting cases of this singular form of disease during the last year, and believing it to be an affection, which, from its importance and novelty, merits an investigation, I am, therefore, induced to communicate a few observations relative to it.

Why it has not been noticed until of late years, is a very singular circumstance connected with the history of this disease; for we must suppose that lactation had the same sympathetic influence upon the mouth in ancient, as in modern times. That it is *peculiar* to women who give suck cannot be denied. Dr. Backus, after a practice of twenty-four years, states that it is peculiar to nursing women; that “no man ever has had it, or ever will.” Dr. Hale, Jr. also confirms this statement. In an extensive practice of seven years, I have never met with a single case of sore mouth in men, or in women who did not give suck, which was in the least analogous to the species of sore mouth now under consideration. Why it should be peculiar to women during lactation we cannot say, unless we refer the cause to a sympathetic connection, *sui generis*, which exists in certain anormal states of the system, between the mammæ during secretion, and the mucous membrane of the mouth and tongue. As a proof that it is caused by a *peculiar* influence of the mammæ, during secretion, upon the mouth and tongue, it will disappear rapidly as soon as the secretion is stopped, by weaning the child. It appears then, that under the influence of the secretion in the mammæ, the mucous membrane of the mouth and tongue becomes, in some instances, sore and inflamed; and that, inasmuch as this secretion does not in every case produce this peculiar influence, there must be a co-operation on the part either of some organ, or a group of organs, or of the whole system, in an anormal state, in order to promote and produce this peculiar influence of the mammæ, during secretion, upon the mouth. What this anormal state of a certain part of the animal economy is, which so acts upon and modifies the secretion in the mammæ, as to favour and promote the developement of this disease, we are unable to determine. We can only say, that as the bowels are invariably more or less costive in the earlier stages of this disease, we may infer that the peculiar sympathetic influence of the mammæ, during lactation, upon the mouth, is connected in some way with derangement of the digestive organs. That the cause of this sympathetic influence of the mammæ upon the mouth, cannot be referred to the specific operation of climate, or to an epidemic constitution of the atmosphere, is manifest from the fact that it is not confined to any particular climate, having occurred to our knowledge in New York, New England, in the West, and in Florida, and that it is always sporadic, never epidemic. Women of all classes and of all temperaments appear to be equally subject to it. The cases that I have met with in Florida, though perfectly well marked, have been so few and scattering that I think it is comparatively a rare disease. When it does occur, however, it is one attended with a great deal of pain and inconvenience, and not unfrequently with danger.

Symptoms. The first symptom is a sensation of soreness and heat of the tongue, and lining membrane of the mouth, accompanied by a free discharge of a thin watery fluid, mixed with an increased secretion of saliva, which in a few days, as the soreness increases, becomes very profuse. The patient

compares the pain and heat of the mouth to the sensation produced by *scalding*. After the disease has progressed for a few days, the lining membrane of the mouth and the tongue exhibits, upon an examination, a peculiar red, or *deep* pink colour, (as is truly stated by Dr. Backus,) and appears to be much inflamed; the edges and tip of the tongue become slightly ulcerated, being covered with small white pustules closely connected together, and in some instances the ulcerations appear upon the lining membrane of the mouth and fauces; and occasionally, if not properly managed, the inflammation and ulceration will extend through the pharynx and œsophagus to the stomach and bowels—these are the cases that terminate fatally. In the cases I have seen, the ulceration of the edges and tip of the tongue did not exhibit such a tendency, to extend deep in the substance of the tongue, as the cases which Dr. E. Hale Jr. describes; but on the contrary the ulcers were superficial. The tongue is uniformly free from fur, and singularly clean, having a smooth and *polished* appearance. This condition of the tongue, its red or deep pink colour, and the thin, copious, and watery discharge, constitute the chief peculiarities of the disease. The bowels are more or less costive, except in those cases in which the inflammation extends from the mouth and fauces to the bowels, giving rise to diarrhœa. There is usually a good appetite; but in consequence of the soreness and pain of the mouth, the patient is obliged to use thin fluid nourishment, of the most soothing character, and the blandest mucilaginous drinks; otherwise the pain would be most excruciating. The patient is always clear of fever, but the irritation attendant upon the disease, loss of rest from the pain and constant drivelling of the saliva, and the inability to take much nourishment in consequence of the soreness of the mouth, all combine in producing great emaciation, in many instances. During the whole course of the disease, the secretion of milk is abundant, and the child keeps vigorous and healthy.

Treatment. After having tried various tonics, vegetable and mineral, and laxatives, with only partial success, I have found that equal parts of the flowers of sulphur and cream of tartar, administered in broken doses, two or three times a day, so as to keep the bowels in a soluble state, constitute the best treatment as regards internal remedies. The combination of sulphur and cream of tartar appears to have almost a specific influence over this disease. The best external application, I think, is borax, either in the form of solution sweetened with honey or loaf sugar, or finely pulverized with an equal quantity of loaf sugar, and applied in the same manner as advised by Dr. Dewees, in cases of aphthæ in children, only in larger quantity. I have also derived great benefit from a weak solution of nitrate of silver, as a wash. In cases attended with considerable exhaustion of the system, the sulphur and cream of tartar should be only used to the extent of obviating costiveness, if it exist; and tonics, such as the precipitated carb. of iron, and the compound tincture or infusion of cinchona, combined with elixir of vitriol, should be given in well regulated doses. Porter is also a good and useful

tonic in such cases. Should the case be complicated by diarrhœa, the diet should be bland and farinaceous, as arrowroot gruel, rice gruel, &c.; and the drinks mucilaginous, and an anodyne, as a dose of the sol. acet. morph. or of laudanum, should be given, and repeated *pro re nata*. In cases that prove refractory, it will become necessary to wean the child, and then a speedy cure will be enjoyed.

MONTICELLO, Florida, October 1st, 1842.

ART. X.—*Case of death from extensive Intestinal and Peritoneal Inflammation, resulting from a perforation of the Intestinal Coats, occasioned by a Calculus lodged in the Appendix Vermiformis.* By J. F. PEEBLES, M. D., Petersburg, Virginia.

AT four o'clock, the morning of Sept. 4th, the present year, I was summoned in great haste to visit Thomas T. C——r, a journeyman potter, aged 52 years. On entering the apartment, his intensely anxious countenance, and shrunken features, at once announced to me that I had not been aroused so early unnecessarily. The patient was almost wild with agony. His pain was seated in the right iliac region, a little below the ileo-colic valve, and from thence it darted intensely down the penis to the orifice of the urethra, and along the rectum to the anus. I found his skin shrunken and cool, yet bathed in perspiration, his pulse small and quick, his tongue dry, and coated with a thick yellow crust. His thirst was very great, and his stomach was becoming irritable. His abdomen was not unusually tense, and no where was there the least tenderness on pressure, except over the seat of the pain, where he could not endure the slightest touch. He had slept well during the night, and only awoke half an hour before my arrival. He was, at the moment of waking, conscious of a feeling of great sickness and prostration, and before a person beside him in bed, to whom he had spoken for the purpose, could strike a light, these feelings suddenly subsided, to be replaced by the pain.

On inquiring into the history of the attack, I learned that on the Friday previous, when he returned at evening from the pottery, he had expressed himself as feeling unusually bad. To use his words, he had, during the day tried alternately both shade and sunshine, to see if he could not free himself from his unaccountably strange and uneasy feelings. He ate his supper however as usual, and it was only when he had fallen asleep on the sofa afterwards, that his landlady, from his breathing, perceived that he was indisposed. His fever continued to rise, and at bed-time he took twelve grains of calomel. By the morning the fever had subsided in a great degree, and after taking a purgative of castor oil and spirits of turpentine, he dressed himself and walked out. At 9 A. M. he was seized with rigor, followed by high reaction, and he was delirious a greater portion of the day. The calomel and oil not operating, he took occasional doses of Epsom salts as the fever advanced. As the evening approached the fever left him, however, and thinking it only an intermittent, to which he was subject, he took ten grains of quinine in pills during the evening, and, as before mentioned, slept well until awoke by the sickness and pain. The medicines he had taken had produced but two slight

evacuations; his urine was scant and very high coloured, and whilst there was a frequent desire for its discharge, it was voided with some difficulty. My first impression was that nothing else could produce symptoms so suddenly urgent and distressing, and at once I instituted inquiry as to the existence of stricture in some portion of the intestinal tube. The patient had inguinal hernia, an unusually large protrusion, but it was reducible, and when reduced, the ring could plainly be felt throughout by the finger. There could then be no strangulation of the intestine, and to fulfil the indications, together with the warm bath, and fomentations applied to the seat of pain from time to time, three pills, made according to the following formula, were ordered to be taken immediately, to be followed by the remainder in two hours, should not the first produce relief:—Hydrarg. submur. ℥i., pulv. g. camph. gr. viii., pulv. g. opii, gr. ii.; m. fiant pilulæ vi. æqual. I saw him again in six hours. There was now reaction, and his skin was hot and dry. The first dose of pills had produced relief, with great drowsiness, from which the slightest touch would awake him with a start, and during which there was continued twitching of the tendons. There was no pain in the right groin, but the soreness was so great that he could not bear the slightest touch or the least motion. The thirst had not abated, and the irritability of the stomach had increased. The tenderness was now extended over towards the right groin. His bowels had not been opened, the injections which had been administered being still retained. Although reaction seemed completely established, his pulse was thready and compressible. Venesection being impracticable, thirty leeches were ordered to be immediately applied over the tender region. The application of a sinapism composed his stomach, and he was enabled to retain a dose of castor oil.

When seen again in the evening, he had had several dark and highly fætid evacuations, and there was evident relief. The tension of the bowels had diminished, and there was not so much tenderness on pressure. His fever had subsided, and with it the subsultus and drowsiness, whilst his skin gave out a warm perspiration. His thirst had left him, and with it much of the irritability of his stomach. In short, the patient seemed amended in every way, and was comparatively quite comfortable. Fearing a return of the chill in the morning, corresponding to the one which had seized him on the morning previous, he was ordered to take twelve grains of quinine at bedtime.

Monday. Summoned again at 4 o'clock. I found the patient labouring under symptoms precisely similar to those of the previous morning; if possible, his agony was greater; as then, he had slept well until awoke at that hour by his suffering. The pain had extended, and now occupied both the right and left iliac regions, over which space the abdomen, without being much distended, was tense and firm, and so extremely sensitive, as not to endure the slightest touch. It darted down most excruciatingly to the anus and orifice of the urethra, and the penis was contracted marvellously, and firm and rigid to the touch. His desire for cold drinks was extremely urgent, and, such was the irritability of his stomach, they were ejected almost the instant they were swallowed. The warm bath relieved the intensity of his sufferings for an instant, and he retained three pills similar to those prescribed on the previous morning. Ordered thirty leeches to be immediately applied, extending over the right and left iliac regions. 10, A.M. The leeches had just been removed when I called. Perspiration had just broken out, and the patient had fallen into a slumber. His pulse continued sharp, but extremely compressible. His repose was only momentary, and when he awoke, I found the symptoms wholly unabated. Several injections had been given without open-

ing his bowels, and the abdominal tension had greatly increased, as had also the tenderness and pain. His thirst had continued, and the vomiting was incessant, and for the first time there was now some slight indications of stercoraceous matter sinking in the bottom of the vessel. The condition of the man was in the highest degree alarming, and the treatment having fallen so far short of relief, a consultation was requested. Whilst a note was being written for aid, the patient, getting up to stool, voided a copious and extremely offensive slate-coloured evacuation. The most urgent symptoms at once subsided, and he expressed himself so much relieved, that the order for consultation was countermanded. He was enabled to retain an oleaginous emulsion, which by the evening produced five copious discharges, similar in character to the previous one. The pain had then subsided, and the tension of the bowels was diminished, although not so much as might have been looked for after such free catharsis; the seat of the pain still remained firm to the touch, and presented the peculiarity, that whilst he could not endure over it the slightest percussion, pressure gradually increased could be borne to an almost unlimited extent. His thirst was not troublesome, and the vomiting had almost entirely ceased. A full anodyne was ordered to be given at 3 A. M., so as to break the apparent intermittent recurrence of the attack at 4 every morning, and he was left for the night.

Tuesday, 7½ A. M. Although he had not slept much, he had had a more comfortable night than he had enjoyed since his illness. He was engaged in cheerful conversation, and expressed himself much better. The tension, pain, and soreness of the bowels were still relieved in a great degree, yet my hopes for his safety were much shaken by learning that he had occasionally been troubled with hiccough during the night, and moreover, by the continuance of the thirst and vomiting, which had rather increased since the previous evening. To relieve these, a large blister was ordered to the epigastrium. His pulse being still sharp, and more tense than it had been, leeches were again ordered to the right iliac region. 1½, P. M. The symptoms had become greatly aggravated in every respect, and the condition of the man, so long doubtful, had now become unequivocally hopeless. The pain, soreness, and tension, was extended over the entire abdomen (the greatest suffering being now in the hypogastric regions), and the torture of the man was beyond description. With a constant desire for cold drinks, there was incessant vomiting of the fluid, mixed with stercoraceous matter; and superadded to this, hiccough had returned, at shorter intervals, to the inexpressible torment of the poor man. His skin was bathed in warm perspiration, the pulse had lost some of its sharpness, whilst its beat was quicker, and the artery, during its inactivity, seemed more filled than it had previously been. The patient, in entreating to be bled, informed me that he had, twelve years previous, been relieved of a similar attack which had seized him in the city of Troy, N. Y., by his physician's bleeding him to fainting. It was totally impracticable, and morphine was administered, and the blister extended over the abdomen. 7, P. M. Visited Mr. C——r in consultation with Dr. Robinson. It was the latter's opinion that the treatment would have relieved the man, had not there been some local cause to produce the inflammation, and since it had not, it, in his opinion, strengthened my first impression, that there was stricture in the hernial ring. After another minute examination, this could not be found to exist, and nothing was left us but to relieve the tension by speedily opening the bowels. Croton oil was ordered, but the patient could not retain the dose, and after a night of exquisite torture, he sank and expired, at a few minutes past four on Wednesday morning.

Autopsy.—A hasty examination was permitted us, and seven hours after death, kindly assisted by Dr. Spencer, it was made in the presence of Dr. Robinson. The external appearance of the abdomen was not unusual. The distension was scarcely perceptible, yet its walls were uncommonly firm and unyielding to pressure. On exposing its cavity, the viscera, as well as their peritoneal covering, were found so highly injected, as to be of a dark purple hue, and throughout covered with coagulable lymph. The omentum was most unnaturally thickened, and on its surface were several sphacelated spots of considerable extent, having around them a more greenish appearance. There was an unusual absence of serous fluid, but when the omentum was raised, floating amid the intestinal convolutions, several ounces of pure pus were discovered. Although the bowels were nearly entirely void of contents, yet so highly were their coats injected, that they communicated a feeling of great firmness to the touch, and this, together with the unnatural thickness of the omentum, at once accounted for the firmness on pressure over the abdomen, which existed the last twenty-four hours of the man's illness. The intestine was traced carefully down; no stricture was found to exist, and the hernial ring was perfectly free from any appearance of inflammation. Passing the finger below this, in the iliac fossa, it came, near the rim of the pelvis, in contact with a solid body. It was ascertained to be in the appendix vermiformis, fully three inches from its junction with the cæcum, and which, without being unnaturally prolonged, was very much enlarged, at the point, to more than an inch in diameter. A perforation the size of a crow quill was discovered at the side of this enlargement, from which, as it was raised, several drops of pure pus dripped away. The large hernial protrusion, together with the weight of the calculus, (for such it was ascertained to be by an examination through the perforation,) had displaced the appendix from its usual position in the body, by drawing it down to the rim of the pelvis, and when discovered, the calculus rested against the lower and left side of the fundus of the bladder inferiorly, superiorly it lay against a fold of the small intestine. It was on this side that the perforation existed; it opened against the small intestine, which for more than an inch above and below, was in a state of sphacelation. Here was evidently the point from which the inflammation diverged, and the surrounding organs, involving the ileum, the ileo-colic valve, the cæcum, the descending and transverse colon, the rectum, from its sigmoid flexure to the verge of the anus, and the fundus of the bladder, were all deeply injected, covered with gangrenous spots, and loaded with coagulable lymph. The bladder was partially distended with urine, and its coats unnaturally thickened. Tracing the ileum from its junction with the cæcum upwards, the degree of inflammation gradually lessened, although the duodenum and the peritoneal covering of the stomach were both highly inflamed. The mucous membrane of the stomach was but slightly injected: the organ was distended, and it contained an injection which had been administered several hours before death. The spleen was enormously distended. The liver was also much enlarged. The gall-bladder was partially filled with apparently healthy bile.

The calculus belonged to the mulberry class; it was nearly circular, more than an inch in diameter through its widest portion, with a very irregular surface. Surrounding it, lodged in the interstices, were a number of tomato seed, and several of those of the currant, some of which had evidently remained there for a length of time, since they were partially incrustated with the calcareous matter. On sawing into it, after passing through a thin but firm

crust of stone, the saw suddenly sunk into a soft substance. On laying it entirely open, the calculus was found to be a thin incrustation, filled with a fawn-coloured and dried matter, light and spongy to the touch; it had evidently been some organic substance, and containing, as it did, several particles made up of distinct fibres, which were perceptibly elastic, the inference is fair that it was of animal origin, perhaps a bit of beef which, defying the powers of mastication, had become accidentally lodged in the appendix, and thus, in the course of time, incrustated. This substance was easily scooped out, and when removed, the cavity left plainly proved that it had been the nucleus, for the crust of stone being of the same thickness throughout, its shape was found to have entirely determined the external conformation of the stone.

It would seem that there was some discrepancy between the appearances on dissection and the general course of the symptoms of the above case. It is evident that the work of inflammation was progressive and unceasing from the first moment of the attack until death supervened; the relief, therefore, that the patient experienced from time to time, is to be attributed to the partial subsidence of the vascular turgescence, the result of the leeching, and the free catharsis, which for the time suspended the tension and pain. The apparent intermittent recurrence of the attack for two successive mornings, preceded, also, by a marked rigor and reaction on the forenoon of the previous day, whilst at the time it had some weight in determining the diagnosis of the case, (since, by the subsidence of the symptoms towards the close of both days, in a great degree, it had some of the characters of intermittent fever in a masked form, a disease which was extensively prevailing in the neighbourhood,) it was to be rather attributed to accidental coincidence, arising from the fact, that the impression produced by the remedies employed so happened to subside at that hour, to leave the disease to its natural course.

There are many interesting cases of calculi in the intestinal canal—recorded in the books and journals, some of them, indeed, so remarkable, as to be perpetuated in every treatise that has yet appeared on this subject; but we have not met with an account of a calculus such as above described being found in the *appendicula vermiformis*, and the case is therefore unique and interesting.

Cases are not wanting, however, of disease resulting from the lodgment of foreign bodies in the appendix vermiformis. Acute inflammation of the cæcum, terminating, if not relieved, in perforation of the intestine, or the formation of an abscess in the iliac fossa, it has been shown repeatedly, may result from the presence of foreign bodies, such as fruit stones, undigested food, or other concretions, lodged in the folds of that intestine or its appendix. An interesting case of a pin passing from the appendix to the bladder, has been recently reported by an English physician. It cannot be uninteresting, whilst upon this subject, to mention a case of this nature, related to me by the sufferer, himself a distinguished physician. He had been for years subject to violent attacks of pain in the right groin, which subjected him to great annoyance. On one occasion the pain, which was confined to a spot over the ileo-colic valve, which could have been covered by a dollar, continued without the slightest intermission for several weeks. After taking many active purgatives without a moment's relief from their operations, he found the pain suddenly and permanently suspended by a free evacuation, the result of an oleaginous emulsion with turpentine. The relief was so sudden and so marked, as to fix the impression on his mind that the discharge

had brought away the offending cause. An examination was made, and the seed of several small fruit and a number of those of the tomato, were discovered in the vessel. Some time after this, and subsequent to another attack, an abscess, which had been slowly but steadily forming for several weeks, burst outwards over the left groin, and in its discharge there again appeared traces of tomato seed. It healed kindly, and from that time, although several years have elapsed, there has been no return of his disease, and the probability is, that adhesions have formed in the intestine, in such a manner as to exclude the entrance of foreign bodies from the appendix.

The origin of the calculus in the present case was undoubtedly a fragment of undigested food, lodged by accident in the appendix; and since the patient had been subject to pain in that region from time to time, ever since his first attack, occurring twelve years previous to his death, which was so violent as to require the most energetic treatment to subdue it, it is not unreasonable to infer that this lodgment occurred at that time. That it should have become coated with calcareous matter, instead of at once, as in other cases, creating irritation and steadily progressing to a serious issue, is an interesting question. Without attempting to account for this fact, it may not be uninteresting to notice, that the presence of stones in the alimentary canals of the inferior animals, whilst it is more common than in the human subject, is more frequent in those of a particular class. And they are peculiar in this respect, from their habits, the complexity of their organs, the length of the intestines in proportion to their bodies, and the nature of their food, it remains for a length of time in their intestines, in a state of partial inaction, thus giving ample time for the agglutination of its more solid portions, and the ultimate formation of calculus on these concretions. These stones, whatever may be their external nature, have invariably for a nucleus some solid substance which had been taken into the stomach as food. These facts furnish a striking analogy with the case before us, where the foreign substance, from its position, was immovable.

Whatever may have been the history of the calculary formation, the perforation, the immediate cause of death, so far from being the immediate result of either its irritation, or the distension of the intestinal coats, (for they were sound except around the opening—the coats of the appendix had evidently distended to accommodate the body, and were in a natural state,) was, it is probable, the result of an effort of nature to free the system from the foreign body by throwing it into the ileum, against which, we have before shown, it lay. The fold of this intestine, against which it was lying, although sphacelated, was much thickened, and densely covered with coagulable lymph, proving that there had been an attempt towards adhesion, which had been interrupted. This fold of the ileum belonged to that portion of the intestine which formed the hernial protrusion; this protrusion invariably occurred when the patient was without his truss, at the slightest exertion; he did not wear the instrument at night, hence it was liable to occur frequently during that period, and in its probable motion during protrusion, we think may be explained this fatal interruption to the adhesive process.

The case, therefore, we think, was unfavorably complicated by the existence of hernia, for had there not been such displacement of the organ, its contiguity would have led to the formation of adhesions, and the calculus would doubtlessly have been thrown into the cæcum, from whence it would have found an easy exit from the body; as it was, had it found its way into the ileum, from its size, it is highly probable it would have found such difficult passage as to occasion equally severe, if not fatal effects.

BIOGRAPHY.

ART. XI.—*Memoirs of the Life and Writings of William P. Dewees, M. D.* By HUGH L. HODGE, M. D., Professor of Obstetrics in the University of Pennsylvania.*

DR. WILLIAM POTTS DEWEES, the late Professor of Midwifery in the University of Pennsylvania, was one of the most distinguished individuals that has ever graced the annals of our profession in this country; his name is indissolubly associated with the history of our science; he found it struggling in the weakness of infancy, and left it fully established in the strength and privileges of manhood.

Of the parentage and early life of our departed professor, little is known. His great-grandfather, and probably his grandfather, were among the immigrants from Sweden, the original settlers of Delaware bay and river, and maintained, for a series of years, a respectable and influential character. His grandmother belonged to the family of Farmer, which appears to have been of Irish descent, their ancestors enjoying much wealth, part of which was invested in the purchase of immense tracts of land in this country. His mother was the daughter of Thomas Potts, a highly respectable English gentleman, whose family first settled and gave name to Pottsgrove (or Pottstown) on the river Schuylkill.

Dr. Dewees was born on the 5th of May, 1768, at Pottsgrove, and being early left fatherless, and with very little property, he had not the advantage of a collegiate education. It is difficult, however—not to say impossible—to restrain genius, even by the chains of poverty and neglect. Young Dewees improved all the means at his command, and must have made some proficiency in the languages, as his knowledge of Latin and French in after life was sufficient for all necessary purposes. He is represented by those best calculated to judge, as docile, industrious, very affectionate, and amiable.

He early determined to study medicine, and was, for this purpose, placed by his father in the establishment of a Dr. Phyle, a practising apothecary, as was very customary at that period, when the proper distinction between the business of the apothecary and of the physician had not been generally made.

Under the superintendence, for two or three years, of Dr. Phyle, he appears to have acquired his knowledge of pharmacy, and its collateral sciences—afterwards he placed himself in the office of Dr. William Smith, to prosecute more especially his professional studies. During his connection with Dr. Smith, and his residence in Philadelphia, in the years 1787, '8, and '9, he attended lectures in the University of Pennsylvania.

* This Memoir was read before the Medical Class of the University of Pennsylvania, November 5th, 1842. Being anxious to lay it before our readers without delay, and having but little space for the purpose, we have been compelled to slightly abridge it.

During the infancy of medical instruction in this country, the degree of Doctor in Medicine was seldom sought after, and in accordance, therefore, with the almost universal custom of the day, Dr. Dewees commenced the practice of his profession without receiving a regular diploma from his preceptors, in the summer of 1789. He was then twenty-one years of age, about the medium height, well proportioned, of a florid complexion, brown hair, rather slender make, and remarkably youthful in his appearance, so that great objections were frequently made to employing a physician apparently so very young.

He commenced the arduous duties of our profession about fourteen miles north of Philadelphia, at the village of Abington, where he soon engrossed all the valuable practice, notwithstanding the objections made to his youth and inexperience, and to the deficiencies of his education. His talents, united with great industry and perseverance, his affectionate and amiable disposition, secured the attachment, and very soon the confidence, of his patients. In this comparatively retired spot, thrown at an early age upon his own resources, with no patronage but his own character and attainments, with no pecuniary assistance, Dr. Dewees, by sedulous attention to business, by careful observation of physiological and pathological phenomena, laid the foundation of his future usefulness and celebrity. He would often, in after life, allude to observations made, or to treatment pursued by him while a youth at Abington, confirmatory of his future theoretical and practical views. He was soon called to a more extensive field of usefulness.

The desolations of a terrible epidemic (the yellow fever), during the summer and autumn of the memorable year 1793, had extended to the practitioners of medicine in this city, as well as to the public generally. Almost universally they remained at the post of danger; and many fell victims to their humane, self-denying, and disinterested devotion to the suffering community. The ranks of the profession in our city being thus diminished, and there being few instructed physicians in the country, a fine opening occurred for those whose education and experience gave promise that their services would be useful. On this occasion a Physick and a James appeared on the scene of action, candidates for a practice and a reputation which were subsequently enjoyed in rich abundance. The opportunity was too promising to be neglected by Dr. Dewees. It immediately drew him from his comparative retirement among the healthy regions and the delightful scenery of Abington. He felt the internal promptings of a spirit that burned for distinction—the stimulus which a consciousness of power excites in the bosom—and without hesitation he forsook his present prosperous career, to embark on a more troubled sea, whose waves had been deeply agitated by the physical causes to which we have alluded, and also by the perhaps still more distressing contentions which existed among the surviving members of the profession, and arose from contrariety of opinions and practice during the recent epidemic. Under these circumstances, Dr. Dewees took up his residence in Philadelphia, in December, 1793, as a candidate, with others, for professional business and reputation.

At this important epoch in the medical history of our city, and of the country, he found the confidence of the public was resting upon a Kuhn, a Shippen, a Rush, a Wistar, and a Griffiths. Dr. Rush soon ascertained the talents and abilities of Dewees, and threw his commanding influence in his favour. An intimacy also took place between Physick and Dewees, and as their course was different, the former preferring surgery and the

latter obstetrics, they assisted each other in prosecuting their respective plans for professional advancement.

Independently of any collateral assistance which Dr. Dewees might have received from the friendship of Dr. Rush, he enjoyed one of the finest opportunities that could possibly be presented for a medical man to rise to wealth and fame. At that period the science of obstetrics was hardly known in America. The physicians who occasionally engaged in its practice, had received no instruction, with the exception of a few, who, having visited Europe, brought home a general knowledge of the subject, but who, from the prejudices existing against the employment of male practitioners, had few opportunities and fewer inducements to perfect their knowledge. Hence, midwifery existed almost universally as an art: the aged and imbecile nurse was almost universally preferred to the physician. Women were generally the practitioners of midwifery, as few imagined any particular instruction necessary for an attendance on labour; at least any beyond that derivable from prolonged experience. Our science, however, is too essentially connected with the lives and happiness of individuals and families, to remain, for a long time, in such obscurity, when knowledge and science on other subjects were elevating the character and developing the resources of the community. As the arts and luxuries of life increased, the dangers and difficulties of the parturient process increased also. Experience lamentably demonstrated that the attentions of the nurse, however experienced, were unavailing; yea, that the officious interference of ignorant practitioners in a process so wonderful and so abstruse as that of parturition, was too often productive of the most fatal consequences to the child and its mother, thus destroying the comfort and happiness of families. In such extremities, all notions of false delicacy are thrown to the winds; the cry for help, arising from the emergencies of the case, is imperative; but, alas, who was prepared to respond to the cry? Who to render the necessary assistance? The physician, who, on such emergencies was called, was unprepared to afford relief; his former studies had been imperfect; his experience in midwifery trifling; his observation of severe cases very limited; and you may imagine the embarrassing and horrible condition in which such a practitioner must be placed, when a human being, and that a female, in agony supplicated for relief—when to him every eye was turned—when on him rested every hope of a despairing husband or a broken-hearted mother, and he felt conscious that he ought to be able, but still could not afford the proper assistance. Such was the condition of our community some fifty years ago—such, we are sorry to affirm, is the state of many communities, in various portions of our country, at the present day—where often, very often, the cry for help bursts from the agonized bosom, and there is no suitable response from the instructed obstetrician.

What greater incitement could be offered to a young medical man, conscious of power, but sensible of his deficiencies, than such a state of things? What more extensive field of usefulness could be presented to a conscientious and philanthropic youth, burning with desire to benefit his race, than to labour for the preservation of mothers and their children during the eventful and agonizing moments of parturition?

The opportunity, thus Providentially occurring, was embraced by the subject of our address. He felt and realized his own deficiencies, but was determined to overcome them. To attain the victory—to prepare himself for the elevated station to which he aspired—could only be effected by rendering

himself equal to the emergency. He reviewed his observations, made during four years at Abington, at the bedside of his patients,—he compared these results with the experience of others: he went still further; he commenced again an examination of the foundations of his science, the fundamental principles of obstetrics; and on these he built his stable superstructure, which has, and will last, to his own credit, and to the reputation of our school, our city, and our country. He made himself familiar with the then modern authorities—the Osbornes and Denmans of England, the Levrêts and Baudelocques of France; and hence derived accurate notions of the science and practice of midwifery.

His investigations, when compared with the results of his own experience, excited a partiality for French in preference to English obstetrics. He chose Baudelocque for his teacher; and often declared that he was indebted to this most distinguished French obstetrician, for all that he himself knew of midwifery. The disciple was worthy of his master.

Thus armed for the conflict, with the ignorance and prejudices of the community—with the irregular, the uneducated, or the imperfectly educated practitioners of the art, he was ready for the emergencies that might occur. Such emergencies were not unfrequent; for, unfortunately, difficult cases of delivery were at that period the result, not only of natural causes, but very frequently of the bad and officious practice of ignorant pretenders to the art, who made that labour difficult or laborious, which, without their interference, would have been natural and comparatively easy. On such occasions Dewees was often consulted; and a large portion of operative midwifery fell into his hands. For him, this was in every way advantageous; his theoretical knowledge became practical—his dexterity in operating, as well as his tact in the difficult art of diagnosis, was perfected; his reputation was diffused through the community, and his practice, of course, became more extensive and profitable. In a short period, therefore, after his establishment in Philadelphia, under the joint influences of the causes mentioned, but especially by his own real worth and decision of character, his success was complete, and he felt that he might safely enlarge his responsibilities and assume new duties, while he added to his comforts and happiness.

About this period he married Miss Martha Rogers, daughter of Doctor Rogers, of New England. Not many years after, this lady, still in all the bloom of youth and beauty, became the sudden victim of an acute disease, to the destruction, for a time at least, of that domestic comfort and support to which her husband had aspired, and which is so needful for all, especially for a physician, whose mind and heart are so constantly engrossed with the sufferings of his fellow beings, and whose periods of relaxation are so rare and so imperfect.

Dr. Dewees, soon after this period, conceived the idea of rendering himself useful, not only as a practitioner, but also as a teacher of midwifery; the science and practice of obstetrics, being little understood in our country, for very few and imperfect attempts had been made to impart even a general knowledge of this most important subject. Dr. William Shippen, one of the founders of the University, has the enviable reputation of being the first teacher of anatomy, of surgery, and also of midwifery, in this country; his professorship embracing these various subjects. So extensive were the duties incumbent on this professor, so fundamentally important was the subject of anatomy, and so urgent were the calls for instruction

in the elements of surgery, that midwifery was necessarily almost wholly neglected in his course of instruction. A few general directions for the guidance of the practitioner, constituted nearly all the information imparted to the student at the close of the professor's lectures.

As no one could realize more fully than Dr. Dewees the want of more extensive and efficient instruction on the subject of practical midwifery, we find that he has the high honour of first attempting a full course of lectures on obstetrics, in America. In a small office, he collected a few pupils, and in a familiar manner, indoctrinated them with the principles of our science; toiling year after year in opposition to the prejudices, not only of the community, but even of the profession, who could not perceive that so much effort was necessary for the facilitating the natural process of parturition.

Thus favourably introduced to the citizens of Philadelphia as a practitioner, and to the professional public as a teacher of the science of obstetrics, his practice became extensive, and his income greatly enlarged.

He again determined to seek the advantages and pleasures of domestic life, and in the year 1802 became united to his second wife, Miss Mary Lorrain, daughter of John Lorrain, a respectable merchant in Philadelphia. In this connection, he was greatly blessed: Mrs. Dewees was preserved in health and strength as the partner of his prosperity and adversity, enjoying with him the innumerable favours which Providence in the course of a long life had abundantly bestowed, and sharing with him those painful reverses that occurred in the latter periods of his life. By this marriage, Dr. Dewees became the father of eight children—three daughters and five sons—most of whom survive him.

Thus successful in his public exertions, blessed in his domestic relations, the object of attention to a large circle of friends, with whom he reciprocated those social attentions to which the natural warmth of his feelings and the sincerity of his friendships constantly inclined him, Dr. Dewees pursued the steady course to a still more extensive reputation and usefulness.

The practice and the science of midwifery were daily gaining importance in the judgment of an enlightened community. Their immense value in preserving life, in ameliorating suffering, in preventing continued and destructive disease, were more and more recognised. The necessity, positive and imperious, of employing as practitioners only those who were suitably indoctrinated, became acknowledged. The practice of allowing females to officiate was constantly diminishing; and the public attention became more steadily fixed on a Dewees, and a James, as the proper representatives of obstetric science, as those best calculated to give it practical efficiency. It soon became evident that midwifery would be regarded in a more important light by the Trustees and Professors of the University of Pennsylvania; that the time could not be far distant when it would be detached from its inefficient and subordinate connection with the anatomical chair,* and be separately taught in this model school of American medicine.

To be prepared for this event in every respect was now no easy task. Competition had already existed for years with many distinguished indi-

* Surgery had already been severed from Anatomy during the lifetime of Shippen; and was rendered a distinct and coequal Professorship under the direction of the father of American Surgery, Dr. Physick, June 5th, 1805.

viduals, especially with Dr. Thos. C. James, his cotemporary, and who, in addition to the possession of fine talents, an excellent education, great personal attractions and influence, was also a lecturer on the science of obstetrics, having commenced his course of instruction with the late Dr. Church in 1801. New competitors were also appearing; and one, although young in the profession, a graduate of 1801, who had just returned from Europe, yet by the brilliancy of his talents, his popular address, and the influence of his former friends in Virginia, and his social connections in this city, obtained an influence as a practitioner, and soon as a teacher in obstetrics, which threatened to distance all his rivals. I allude to Dr. Chapman, the present distinguished Professor of the Practice of Medicine in this University, who, on the death of Dr. Church, became associated with Dr. James, in 1805, as a lecturer on obstetrics.

Dr. Dewees immediately determined to strengthen his position in public estimation, by attending to the forms, as he had done to the essentials of the profession. He applied, in the spring of 1806, to his Alma Mater for a diploma, that he might be fully entitled to the appellation of Doctor in Medicine, as he had for years been engrossed with the duties and responsibilities of the profession. On this occasion he wrote an elaborate *Thesis*, on the means of moderating or relieving pain during the process of parturition, in which he assumed the broad ground, that pain was an accidental or morbid symptom of labour,—the result of artificial modes of living and treatment, to be moderated or destroyed by medical means. Whatever opinion may be entertained as to this general proposition, there is little discrepancy of sentiment as to the efficacy of the remedy chiefly relied upon by Dr. Dewees, *i. e.* copious blood-letting; nor as to the fact, that to him, the profession, and through it, females universally, are under the highest obligations for the introduction of this measure into efficient practice. The Professor of Anatomy, Dr. Shippen, declared that “it marked an era in the history of Medicine,” and exclaimed “how much misery might I have prevented had I known it forty years ago!”

The anticipated crisis respecting the establishment of midwifery as a distinct professorship, did not occur until the year 1810; so slow is the progress of truth, so difficult to illuminate the minds of men as to their true interests.

For this elevation of obstetrics to its legitimate station, we are much indebted to the late Professor of Anatomy, Dr. Caspar Wistar, who, in January, 1809, soon after he succeeded Dr. Shippen as Professor of Anatomy and Midwifery, urged, in a written communication, the Trustees of the University to have obstetrics separately taught in the school. Another year was suffered to elapse; and it was not until the 11th of April, 1810, that the resolution passed the board constituting midwifery a distinct Professorship; even then, with the miserable proviso, that an attendance on its lectures should not be essential for graduation.

The struggle for the new chair in the University was very warm, and the claims of opposing candidates, and the influence of their respective friends, rendered the event doubtful. The strong claims of Dr. Dewees, his talents, his industry, his attainments, his dexterity, boldness, decision and judgment as a practitioner, his great success in the practice of his art, and as a teacher of its principles, his popularity, supported by the strongest testimonials from many of the distinguished men in the profession, including Rush and Physick, were met by analogous claims of opposing candidates, Dr. James, and Dr. Chapman.

On the 29th June, 1810, the decision was made by the election of Dr. Thomas C. James to the new Professorship, the first in this country. This disappointment to the long cherished hopes and expectations of Dr. Dewees was certainly great, but involved no loss of character, as the most ample testimony was borne as to his qualifications and character, and the public confidence in his skill was entirely unabated. It could only be said that his influence with the Board of Trustees proved to be weaker than that of his rivals.

Dr. Dewees, turning his attention from the teaching to the practice of obstetrics, devoted himself, with renewed energy and success, to the active duties of his profession, occasionally allowing himself some relaxation in the pleasures arising from social intercourse, and also from indulging a natural taste for painting and music. For these arts he early manifested a decided inclination; and, although he never allowed himself time to study them in detail, yet for both he entertained the feelings and enthusiasm of an amateur, and was often refreshed by their agency amidst the anxieties of his self-denying and engrossing profession.

So devoted, however, was he to business, that his health, although it had been generally excellent, could not withstand the baneful influences arising from loss of sleep, irregular hours, laborious occupation, and continued mental and moral excitement, to which every practitioner of medicine, especially an obstetrician, is constantly exposed. His breast became delicate, and on several occasions he was threatened with hemorrhage from his lungs.

This dangerous indication of pulmonary affection, conjoined with a tempting pecuniary investment, induced Dr. Dewees, in the year 1812, to resign his profession, with all its honours and tempting prospects, and to remove to Phillipsburgh, where he invested the proceeds of a life of toil and self-denial. Disappointment followed this speculation, and a few years sufficed to destroy the property Dr. Dewees had been years in accumulating. His health, however, improved, and all fears of pulmonary disease having vanished, he returned in the fall of the year 1817 to the scene of his former prosperity; again a poor man, as regarded pecuniary matters, with a large family dependent on him entirely for support, but rich, in reputation for talents, industry, and success in his profession.

His immediate wants being supplied by the kindness of professional friends, he resumed his private course of instruction to medical students on midwifery, and the practice of his profession. He soon became connected with Drs. Chapman and Horner in the Medical Institute of Philadelphia, founded originally by Dr. Chapman, about the year 1817, and to its success Dr. Dewees greatly contributed, from the period mentioned until 1832, when age, and other pressing circumstances, induced him to resign.

As a practitioner his success was again complete; his former patients welcomed his return; and his increased reputation, supported now by the observations and experience of a long course of active professional duty, soon enabled him to discharge his pecuniary obligations, and to furnish him with the comforts and luxuries of life.

He now resolved to record, for his own reputation, and for the great benefit of the public, the results of his experience and observations on the nature and treatment of diseases, and especially, as regarded his favourite science of obstetrics. Thus obeying the good old-fashioned and common sense rule, first to study; then to practise; and finally, to teach and write;

in opposition to the practice of very many who undertake to publish books long before they have an opportunity of verifying their opinions by their practice.

The first publication was a second edition of his inaugural essay. The subsequent experience of practitioners has abundantly corroborated the advice of Dr. Dewees urged in this essay, as to the advantages of free bleedings in cases of rigidity—advantages not only of a positive character, in favouring relaxation, lessening pain, and hastening the process of parturition, but, also of a negative character, perhaps still more valuable, in preventing a vast amount of suffering, mental agitation, disease, and also of death. Would that his precepts were still more extensively studied, and more frequently acted on. Would that many, eminent in the profession, would sit at the feet of this Gamaliel, this teacher in medicine, and imbibe some fundamental notions of the importance of medical, and the dangers of surgical measures in cases of tension and rigidity of the soft parts during the process of labour. We should then, no doubt, hear less of some of the terrible cases in midwifery than at present.

After this Dr. Dewees collected his scattered essays, which, for a series of years, had been occasionally presented in the medical periodicals, and republished them in a distinct volume. This was in 1823. The character of these essays is generally practical; indeed, all have a bearing on the opinions and duties of a practitioner, although some are of a theoretical and controversial character. In all of them, we find displayed the great good sense, clearness and precision of their author, who seems to improve every subject he touches, and to carry forward the principles and practice of his predecessors to a still greater degree of perfection. These observations are made, not with any design of endorsing all the opinions of Dr. Dewees—for this cannot be done, as no doubt many of them are untenable, especially those which are merely speculative, and those which are connected with the very imperfect physiology of the day—but, with the important object of characterizing the writings of an individual who has accomplished more for obstetrics than any man of our country, and who has elevated himself, by the character of his publications, to a station of high authority in the profession. He is our representative to other nations on the science of obstetrics, and as such is continually quoted by European authorities, as if he constituted one of their own number.* This is high distinction, and the more worthy of admiration as attained by mere force of character—by talent, industry, and sedulous attention to business, without any assistance from education, wealth, and other accidental influences.

* Dr. John Ramsbotham, of London, dedicated the second part of his "Practical Observations on Midwifery," to Dr. Dewees, in connection with Sir C. Mansfield Clark.

Dr. Edward Rigby, of London, an author of a most excellent work on Obstetrics, which has lately been republished in this country, writes to Dr. Dewees in August, 1834, in the following manner:—"I trust you will pardon the liberty I have taken in writing to you, as well as the motives which have induced me to do so. I have been accustomed, for some years, to hold such frequent intercourse with you in reading your admirable system of Midwifery, and work on children, that I cannot refrain from requesting a more direct intercourse between us," &c. &c.

The July number of the British and Foreign Medical Review, for 1839, contains the following handsome compliment:—"The Philadelphia school of Midwifery has for many years been looked upon with great respect by the obstetricians on this side of the Atlantic. The high name and professional standing of Dr. Dewees, his great experience, and, above all, his inestimable, compendious system of Midwifery and other valuable publications, have mainly contributed to this result."

By his essays, Dr. Dewees has done much in ameliorating suffering and prolonging life, by inculcating good principles, and insisting on a better practice. For example, in one paper he ably sustains the important idea that labour, in the human species, and especially in the upper walks of life, ought not to be so exceedingly painful as it is usually observed; and that, by proper attentions, even under all the disadvantageous influences of civilized life, suffering may be materially lessened.

He also ably and successfully notices Dr. Denman's celebrated aphorisms for the use of the forceps, demonstrating their inconsistency and their dangerous tendencies, especially by restricting too much the use of these invaluable instruments.

He has introduced advantageously into practice, the more extensive and precise use of the ammoniated tincture of guaiacum, in the treatment of some of the varieties of dysmenorrhœa and amenorrhœa. His observations on puerperal convulsions, and particularly, on the essential importance, in these horrible cases, of the free use of the lancet, are invaluable. To him we are indebted for the full establishment of a decided practice in such cases—a practice so efficient, that puerperal convulsions are no longer one of the *opprobria medicorum*; a death now being almost as rare an event as a recovery was formerly.

The views taken of uterine hemorrhage, of retroversion and inversion of the uterus, and the criticisms upon the directions given by some high authorities in obstetrics, are almost equally important, and would alone constitute a most powerful claim to the gratitude of all those interested in the health and lives of females.

After the publication of these essays, Dr. Dewees commenced the preparation of a series of systematic works, upon which after all, his reputation must eventually depend. The reputation acquired by any one as a practitioner of medicine, as a successful teacher or lecturer, is after all ephemeral. It lives at the utmost, only during the lives of the recipients of favours thus conferred. The wave of another generation carries the name thus acquired, to a silent oblivion. He who would live in the memories and hearts of men,—or rather,—he who would be useful after his body has been decomposed in the grave, must record the results of a life of observation and labour.

The first systematic work of Dr. Dewees, is probably his best—upon which he bestowed most thought and labour,—viz: His "*System of Midwifery for the use of students and practitioners.*" We have already alluded to the state of ignorance which universally existed throughout our country, on the science of obstetrics, towards the close of the last century, and of the light which beamed forth when a James, and a Dewees, became practitioners, and afterwards teachers of midwifery. Few or no publications had been made on this subject in America, and few of the foreign works circulated to any extent. Dr. Dewees was among the first to diminish this evil, by republishing in 1807, Heath's translation of Baudelocque; Dr. Chapman, in 1810, published an edition of Mr. Burns' (of Glasgow) principles of Midwifery; and Dr. Bard, of New York, the President of the College of Physicians and Surgeons, about the same time issued a compendium of the theory and practice of Midwifery,—designed rather to diffuse among ignorant midwives and practitioners, a knowledge of the rules for practice, as laid down by the best European authorities—rather than to make any attempt to enlarge the boundaries of the science. At

this juncture, Dr. Dewees's book opportunely appeared—the first regular systematic work of which our country could boast—although to Dr. Bard the credit belongs, of being the first one to instruct upon a large scale the physicians of our country in the art of midwifery.

To an American, therefore, the appearance of Dewees's work on Midwifery, is an important epoch in the history of our science, as being the first regular attempt to think for ourselves on tokology, and to contribute to the onward progress of this important division of medical science. It is the more important from the intrinsic value of the book, which, with all its deficiencies, probably constitutes now, at the expiration of twenty years from its original publication, the best practical book in our profession,—a book, gentlemen, which every one of you, as obstetricians, and especially as American obstetricians, should undoubtedly obtain and carefully study. It is founded on the French system of obstetrics, especially on that of Baudelocque. It takes a stand decidedly in advance of Denman, Osborne, Burns, and other English authorities in general use in our country at that period, and even of Baudelocque himself, in throwing aside from his excellent system much that was useless, and, it may be said, imaginative. On the mechanism of labour, on the details of natural and preternatural deliveries, and on the scientific rules for the safe conduct of labour, founded on a knowledge of the process of delivery, the system of midwifery by Dr. Dewees is exceedingly valuable as far as it goes: and it advances farther than any work of the day. That it should, on these points, be in the rear of the present state of the science, is the necessary result of the onward march of the human intellect. In what may be termed the medical portion of his system, Dr. Dewees may still be considered as one of the first authorities of the day. He is, on all occasions, eminently practical. His directions are clear and decided—his practice, founded on scientific research, and directed by great prudence and judgment, is always efficient—yet never rash. He affords to the suffering female all the relief which science and experience can impart, yet never endangers her life or her welfare, or that of her unborn offspring, by interfering improperly in the complicated and wonderful process of delivery. He studied nature: at the bedside, he became conversant with the details of natural delivery; he discovered what could be accomplished by the efforts of nature, and what could not: he learnt when the instructed practitioner should quietly wait for the development of the physiological actions of the female system, in silent admiration at the wonderful arrangements of a merciful Creator, and where, also, the resources of science were demanded in facilitating these actions, or in actually interfering for the safety of the mother or her infant. He was not to be numbered among those, on the one hand, who are the advocates of a “meddlesome midwifery,” continually doing mischief through their ignorance and rashness; nor, on the other hand, will you ever find Dr. Dewees among those inefficient practitioners, who will never do good through fear of doing evil; who are so afraid of the abuse of artificial resources, they will never use them; who will allow, with the utmost indifference, the agonies of parturition to continue hour after hour, day after day, endangering the safety of the tissues, functions, and life of a delicate female, involving the welfare of her infant also, for fear of assuming responsibility; for fear he should be regarded by the timid or jealous ones as fond of interfering with nature's processes, as anxious to employ medical or surgical measures upon all occasions. Read his system of midwifery, and you will discover how

prudence and judgment are united with boldness and decision; how the practitioner is represented as the servant of nature, ready, at the instant, to facilitate all her efforts for a safe and rapid termination of inexpressible sufferings; always on the alert to detect any deviation from the proper course of delivery—on the alert to afford the required assistance, whether by medical or surgical measures. You will find him estimating rightly the value of human life, whether infantile or maternal, sympathising with human suffering, and anxious, on all occasions, to alleviate, shorten, or destroy the pains and anxieties, mental as well as corporeal, of the process of parturition.

That the work is not perfect, is to say that it is a human production; that it is not embellished by fine writing, and that occasionally it is diffuse, indefinite, and illogical, is the misfortune not the fault of the author. On the contrary, these very defects show the obstacles he had to overcome, and contribute to indicate more fully the native talent, the good sense, the great industry, and the practical efficiency of our *American Baudelocque*, whose name is inscribed upon the roll of fame, as one of the first of obstetric authorities—our representative in the general republic of science, on the subject of obstetrics. Nine editions of the system of midwifery have appeared, and no doubt a long period will elapse before subsequent authorities will be preferred to one, now so eminent at home and abroad.

Having contributed so much for the welfare of mothers, by his work on midwifery, he has contributed greatly to the suitable management of infants by his next systematic work, "*A Treatise on the Physical and Medical Treatment of Children*," published in 1825, and which has now passed through seven editions.

As its predecessor, this work is in advance of the doctrines and practice of the day; and for all practical purposes, irrespective of certain pathological views and scientific details, may still be regarded as unrivalled, notwithstanding the numerous publications on the management of infants and children with which the press has been loaded.

Dr. Dewees investigates the influence of the mother on her child, especially during pregnancy and lactation; he displays the importance of the physical management of infants, during the first weeks and months of life, as well as subsequently, and enters his decided protest against the prejudices and malpractices of ignorant and unskilful attendants, and points out, with his usual minuteness and discrimination, the modes of preserving health and life, of preventing and of curing the diseases of this helpless, but suffering portion of the community. To him we are greatly indebted, simply for fixing attention on the physical management of children, independently of the high value of his directions; for, prior to this period, the profession in this country left the details almost exclusively in the hands of nurses and midwives, with all their tormenting ignorance and officiousness.

In 1826, only one year after the publication of the work on children, appeared an elaborate volume, "*A Treatise on the Diseases of Females*," another standard work in our medical literature. Such a publication was much wanted, and was readily received by the community, as well as by the profession, as high authority. It circulated, as well as its predecessor, very rapidly in every part of our land; and it became, what it still is, the book for reference in all questions of practice, on the important, delicate, and difficult subjects which it embraces.

We cannot particularise, but would remark, in passing, that it bears the general character of the works of the author, as being dictated by great

decision and judgment, the result of much reading, but especially of careful and minute clinical observation. Hence, as a necessary consequence, from such an observer and practitioner, it adds materially to our knowledge of complaints exceedingly difficult to investigate, gives a precision and an efficiency to practical rules which were every how desirable, and has thus greatly ameliorated the sufferings of females, and procured much health and happiness to this afflicted, but too much neglected portion of the community. On the subject of prolapsus and retroversion of the uterus, it may, in addition, be remarked, that to no one individual are females so much indebted, in our country, as to Dr. Dewees, for fixing professional attention on the prevalence of these complaints, their importance, their distressing character, their proper treatment by means of pessaries, and especially for his improvement in the form of these instruments, and in the material of which they are composed; recommending the glass or metallic instruments in preference to the perishing materials previously employed, and which, from this cause chiefly, were the source of so much irritation, as to bring these invaluable assistants into great disrepute.

The last of the systematic works issued by our professor was on the practice of medicine, in the year 1830. Encouraged by the success of his former appeals to public, as well as professional attention, and anxious that those individuals who were remote from medical advice on the frontiers of our country, should have some means at command to assist in the management of their complaints, Dr. Dewees was induced to prepare a digest of his experience on the various diseases of the human system, with a view to popular as well as professional patronage. He in part succeeded, as no one can deny the excellency of the practice usually inculcated by Dr. Dewees. Still, the book has no pretensions to a scientific arrangement or treatment of diseases; and being prepared hastily, and with reference to popular use, does not partake largely of the confidence of the profession.

While thus much engaged, during a period of more than seven years, in making large and valuable additions to our medical literature, the attention of Dr. Dewees was in no degree diverted from his practice. How he accomplished so much is wonderful; how a man, engaged night and day in the general practice of his profession, and especially in the harassing duties of obstetrics, could so rapidly and efficiently labour with his pen, can only be explained by allowing him a happy combination of physical, as well as mental powers; as rare as it is desirable. His mind, indeed, never seemed to be fatigued; always on the alert, it would, even after great physical exertion, after the loss of rest and sleep, revert from one subject of thought and anxiety to another, and, at any moment, be directed from the anxious contemplation of a dangerous case of disease or of labour, to the quiet, but engrossing business of an author, with its memory, acuteness, judgment, and every other faculty, ready for active exercise.

Another explanation is, that Dr. Dewees well knew the value of moments of time, and could well improve them. He never suffered them to be lost, and could, as he has often affirmed to the speaker, carry on a train of thought, or an argument, for a few moments, and then, after hours of interruption, resume the current of his thoughts, and immediately prosecute his writing.

During this portion of the life of Dr. Dewees, various changes by death and otherwise, had occurred in the University of Pennsylvania, to which we need not allude at the present time, excepting to state, that the health

of Dr. Thomas C. James, the Professor of Midwifery, had visibly declined, so that he stood in need of assistance in carrying on the course of lectures. This had been partially rendered, as regarded the anatomical portion of the lectures, for some years, by Dr. Horner; but in 1825, it was resolved by the trustees, at the request of Dr. James, that an adjunct should be appointed to the chair, and on the 15th of November, 1825, Dr. Dewees was unanimously elected to this station, during the existence of the then incumbent.

Dr. Dewees, on his entrance into the University, was fifty-seven years of age, in full possession of his mental and corporeal faculties. His figure had spread considerably—so that he could be termed portly—while he maintained a comparatively youthful appearance, from his florid complexion and brown hair, still without the silvery gloss of age. The duties of the professorship gradually devolved more and more upon him as Dr. James declined in health, and were discharged in a manner very acceptable to the students. Of course, there was no great display of eloquence or erudition in his lectures, but he was always clear, decided, precise, and minute in his directions, speaking in rather a conversational style, with the promptitude and confidence of a man who had formed his own opinions by his own observations, and illustrating all that he taught by a rich fund of cases and anecdotes, drawn, in a great measure, from what he had himself witnessed. Such a teacher could not be otherwise than interesting, and, from the whole character of his mind, with its endowments, natural and acquired, you may readily conclude he must have been exceedingly valuable. His popularity was great, and his usefulness became thus greatly extended; his pupils distributing his fame, as well as his valuable instructions, through the extent of our country.

For several successive years Dr. Dewees reaped, in every way, the harvest resulting from his long and persevering efforts in the cause of medical and obstetric science. His income from his practice, his books, and his professorship, was ample for his present and prospective wants; he was admired, beloved, and trusted in the community in which he moved; he enjoyed an enviable reputation in America and Europe, and was continually receiving testimonials, in various ways, of the estimation in which his character and works were held. He had been, for a long series of years, a member of the American Philosophical Society, and was continually receiving certificates or diplomas from medical and other scientific bodies in the United States, in the Canadas, and in Europe, with the gratifying intelligence, that they considered themselves honoured by adding his name to the list of their members; while private letters from distinguished physicians confirmed, and rendered still more gratifying, these public manifestations of regard and confidence. In the domestic and social circles, his prosperity was equally great, and his warm heart was continually engaged, as far as more important business would permit, in reciprocating convivial enjoyments with his friends and fellow-labourers, within and without the profession; while, notwithstanding the lapse of years, his health and strength continued vigorous and active.

These blessings were continued, without interruption, until February, 1834, when a comparatively trivial accident, a sprain of his ankle, became the turning-point of his prosperity—the commencement of a series of trials which continued to the close of life. Owing, probably, to the confinement to the house, in consequence of his accident, his system became gradually plethoric, and he suffered from the want of his accustomed enjoyment of air

and exercise. In the month of April he suddenly became apoplectic, but owing to the timely assistance of his friends, Drs. Hays and Chapman, the dangerous symptoms were arrested, but his corporeal faculties were decidedly impaired. Cessation from business, travelling, and recreation, were so far successful, that in the fall of 1834 he was able to return to his practice, and received from the trustees of the university the unanimous appointment of Professor of Midwifery, Dr. James, from his great infirmities, having resigned this office, which he had the honour to occupy for twenty-four years.

With some of his former vivacity, Dr. Dewees was enabled to discharge the duties of his professorship during the ensuing winter. The exertion was, however, too great. In the spring his health was more impaired, and, notwithstanding every attention from his medical friends, and the influence of a change of air and travel, the autumn of 1835 found him weakened in mind and body. He made an attempt to deliver the winter's course of lectures, but it was apparent to himself, as well as to others, it was altogether futile, and on the 10th of November he resigned his professorship in the University of Pennsylvania.

This mournful event, to his colleagues, to the students assembled to receive the results of his long tried observations, to the university, and to the public, was not suffered to pass unnoticed. Flattering resolutions, expressive at the same time of their sympathy and regrets, were passed respectively by the board of trustees, by the medical faculty, and by the assembled students. The latter were characterised by the warmth of feeling so interesting in young men; by the expression of their high respect and confidence in his talents and attainments, in his honour and rectitude of purpose; of their gratitude for the favours received at his hands, and especially for the invaluable services he had rendered them and the medical public by his lectures and his works, his oral and written instructions. Anxious to honour their afflicted teacher, to bear testimony to the sincerity of their declarations, and, at the same time, to evince to posterity the gratitude and affection which his talents, industry, and virtue had excited in his pupils, they resolved to present to the retiring professor a magnificent silver vase, with the following inscription:

PRESENTED TO

WILLIAM P. DEWEES, M. D.

Late Professor in the

UNIVERSITY OF PENNSYLVANIA,

By the

MEDICAL CLASS OF THAT INSTITUTION,

As a testimonial of their respect for his exalted worth and talents.

PHILADELPHIA, NOVEMBER, 1835.

"Semper honos, nomenque tuum, laudesque manebunt."

Thursday, the 25th November, 1835, was the day appointed to make the presentation. The scene was most interesting, and could never be forgotten by those who were witnesses and actors on the mournful occasion. To behold this room, the arena of his former efforts to instruct and edify, crowded to excess by physicians and students, anxious to pay their

last respects to one so respected and beloved—to behold the venerable professor, famous, in both worlds, for his contributions for the alleviation of human misery, himself the sufferer, unable to sustain himself without assistance, seated in the centre of that beloved circle of students, to whom he was anxious to impart instruction, but to whom he was about to bid a long, a last farewell—to witness the great man, the bold, decided, energetic practitioner, bowed down under the influence of physical feeling, and the overpowering moral sentiments by which his bosom was agitated—to hear the chosen representative of affectionate pupils proclaim his talents, his virtues, his attainments, and to testify, by words and actions, their gratitude and affection—to discover that the deserved recipient of all these attentions was so overwhelmed by conflicting feelings, by the remembrance of the past, the solemnities of the present, and the prospects of the future, that words failed him to express his gratitude,—that another individual, his long tried friend and colleague, Dr. Chapman, had to pour forth the acknowledgments of his grateful heart, for such sincere and lasting testimonials from his beloved disciples, all constituted a scene so impressive, that the voice of eloquence alone could do it justice. It was a scene for the painter, or for the poet. It was one of those delightful manifestations of the best feelings of the human soul, rarely, it is true, to be witnessed, but the more impressive from its rarity in this world, where selfish feeling too generally predominates, and stifles the warm aspirations of a generous and noble nature.

This hour may be considered the last of the professional life of Dr. Wm. P. Dewees. He retired from the scene of his labours to embark for Havana, in the Island of Cuba, in search of health and strength. The experiment was not wholly in vain. He recovered sufficiently to attend to some of the lighter duties of a practitioner in medicine, which he discharged chiefly at Mobile, in Alabama, where he spent most of his time for more than four years, receiving marks of confidence and attention from his professional brethren of the south—most of them his former pupils.

In 1840, he left Mobile for Philadelphia, where he arrived, after spending some months in New Orleans, on the 22d day of May, 1840, but he was an altered man; his physical frame had dwindled away under the influence of disease, and, although his mind retained much of its original acuteness, he appeared as the representative of the past, rather than a member of the present generation.

Our cold weather proved unfavourable to his strength and health, causing congestions of his vital organs, and producing so much distress and suffering, that he was anxious to be released from a world in which he felt that he had finished his work. Such, however, was the strength of his constitution, that this solemn event did not occur until the 20th of May, 1841, when his anxious spirit was released from its earthly and suffering tabernacle.

On the news of his death, a special meeting was called by the Philadelphia Medical Society, and resolutions passed expressive of their deep regret at the decease of their fellow member and late Vice President—of their high sense of the beneficial influences exerted by his talents, attainments and professional character—and of their desire that I should prepare a memoir of their late admired professor.

His funeral was attended on the 22d of May, exactly one year after his return to Philadelphia, by his former colleagues, the professors in the

University, by the members of the Medical Society, by the physicians and students then resident in the city, as well as by many of his former friends and patients, who were anxious to pay their respects to the memory of their friend and physician.

"Sic transit gloria mundi."

Such, gentlemen, is a cursory notice of the life and labours of our departed professor. On review, we must all be impressed with the belief, that nothing but a powerful intellect could have raised him from his state of ignorance and poverty in the year 1786, to the station he occupied in 1834, as the first obstetric teacher and writer in these United States. As already remarked, the character of his mind was that of strength, rather than of brilliancy, or even originality; his judgment was unrivalled, and his memory most retentive. He laid hold, with a giant's grasp, of the information within his reach, made it his own, and almost invariably, by careful experiment and observation, rendered this information more complete, and carried the opinions and practice of others nearer to perfection. He was truly a man of genius; and thus, as we have seen, contributed greatly to elevate his favourite science to its proper grade in public estimation. He was a man of strong and decided opinions on all those subjects, to which his attention was turned. Here he spoke positively, and acted with boldness and decision. He never failed in an object for want of nerve or decision of purpose. Fortunately, his judgment was so correct, that on practical subjects he was comparatively seldom mistaken; and hence his boldness and energy were productive of great good, rather than evil. Those who were his contemporaries, and had the best opportunity of judging, universally bear testimony to his excellency as a practitioner, whatever may have been their estimate of his theoretical opinions. Indeed, it was almost impossible, that he could have attained to great superiority in the theoretical department of our profession, which demands, even for the purpose of making short progress, a fund of scientific information, and of literary and classical cultivation, with which few are favoured.

In the practice of obstetrics, the boldness and decision of Dr. Dewees was of vast importance. There was no rashness in his efforts, because he took the essential precaution of studying the science of midwifery, before he ventured on the difficult points of practice. He imbibed the best principles from the best teacher—Baudelocque of France,—and thus furnished, he had no want of confidence in himself, or his art, in any emergency. He never drew back and allowed his fellow beings to perish, when the means of relief were at command, for fear of danger or responsibility. All that could be done was done, and well done; and I have the authority of my now venerable colleague, Dr. Chapman, the fellow labourer of his friend, Dr. Dewees, for declaring, that no man was a better or more successful obstetric operator than Dr. Dewees, especially in the use of the forceps. The consequence has been, that not only did our predecessor accomplish a vast amount of good himself by means of operative midwifery, but he has, by his example and his instructions, vindicated this branch of the profession from the reproaches of the timid or ignorant practitioners, who were so terrified by the horrible consequences of mismanaged labours, as to dread the employment of artificial measures, even in cases of acknowledged difficulty. The daughters of America, in this

respect owe, and will always owe, an immense debt of gratitude to their true friend—Dr. William P. Dewees.

But something more than mere talent and force of character is demanded to insure success as practitioners of medicine, particularly for those whose attention is devoted to the sufferings and diseases of the more delicate portion of the human family. The qualities of the heart must be superadded to talent and wisdom. In this respect, Dr. Dewees was not deficient; although not remarkable for polish of manner or refinement of character, he had warm affections, became deeply interested in his patients, sympathized with their sufferings, and, by the kindness of his manner and the earnestness of his attentions, impressed them with the belief, that all the energies of his character, and all the resources of his profession were devoted to their relief. He was peculiarly happy in his conversation with his patients: having a cheerful, pleasant disposition, and an abundant supply of pleasant information, he beguiled the hours of suffering, and rendered his presence acceptable as a consoling friend, as well as an efficient physician. He was, therefore, greatly beloved by those who depended on him for relief. Following him, as I have done, in his practice in this city, it has been a gratifying circumstance to listen to the praises of one who, while he occupied the elevated position which we have described, would bend to the voice of suffering humanity, and pour consolation and peace into the hearts of those who were looking to him for deliverance from corporeal sufferings. He was an amiable man, although endowed with strong feelings and a quick disposition, which would occasionally be manifested, like the lightning's flash, he never bore enmity, and soon returned to the enjoyment of the kindlier feelings of his nature.

He was a man of taste as well as of genius. As already remarked, he was an amateur, but not a proficient, in music and painting. The walls of his house were covered by the productions of the masters of the art of painting, which cost him large pecuniary sacrifices: while to music, he devoted much of his leisure, and was refreshed by its agency amid the severe duties of his profession. He was among the founders of the Musical Fund Society, and its first president, which office he resigned in May, 1838, after his removal from Philadelphia.

As a friend and companion, he was always acceptable. Fond of the pleasures derived from social intercourse, he partook of them frequently, considering his pressing avocations, and always contributed greatly to the gratification of his associates by his cheerfulness, his vivacity, his fund of anecdote, and by the strength of his thoughts and expressions.

In all his intercourse with society, he was candid, honourable, and high-minded. In all the domestic relations of life, the warm affections of his spirit were continually manifested; he contributed much of his substance to the support of helpless or unfortunate relatives; he was hospitable, and with an open hand ready to relieve the wants of his friends. As a husband, he was considerate, devoted, and affectionate; as a father, most indulgent: as a brother and friend, kind and attentive. Amidst all the reverses of life, (and few individuals have passed more rapidly and more frequently from one extreme to another,) he always maintained the amiableness of his character, and his active devotion to business, and laboured, even to his last hours, through pain, weakness, and great infirmities, to supply the wants of a dependent family.

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REVIEW.

ART. XII.—*Animal Chemistry, or Organic Chemistry in its application to Physiology and Pathology.*—By JUSTUS LIEBIG, M. D., Professor of Chemistry in the University of Giessen, etc. etc. etc. Edited from the author's manuscript, by WILLIAM GREGORY, M. D., Professor of Medicine and Chemistry in the University and King's College, Aberdeen. With additions, notes and corrections, by DR. GREGORY, and others, by JOHN W. WEBSTER, M. D., Erving Professor of Chemistry in Harvard University. Cambridge: Published by John Owen, 1842—pp. 347.

It must be matter of congratulation in the medical profession, that it has, as a fellow labourer in the investigation of the chemical phenomena of the animal organism, so distinguished a chemist as Dr. Liebig; one who has contributed so largely to the improvement of organic chemistry. Since this branch of chemistry has made such rapid advances, physiologists and practitioners of medicine have desired that the changes taking place in the animal body, might be examined in their chemical relations. This examination is undertaken in Liebig's Report to the British Association. He does not consider the questions he has raised as definitely solved, but that so far as progress has been made, it has been by the only true method, the *quantitative* method. Some of the physiological views will, we think, require modification. It is the duty of the chemist to show that certain tissues are composed of certain elements, that the elements of the blood equal those of bile and urate of ammonia, for instance. It remains for the physiologist to determine by experiment, whether the conclusions drawn by the chemist from such a fact be accurate or erroneous. Any errors in these conclusions, it must be remembered, leave the facts unaffected, and, as facts, worthy of study. We shall endeavour to present as full an analysis of the work as our limits will allow, and especially of those parts which may be more particularly interesting to the physician.

Our author introduces his report by remarks on the vital force, and its influence over all purely chemical action in the animal system. He does not, however, fully explain his views with regard to this agent in this part of the work, but leaves much to the chapter on Motion, in which the subject is resumed, and his deductions examined. Vitality is recognised in two states, that of rest and motion; in the animal ovum and seed of a plant in the state of rest, and in the same ovum and seed, after impregnation in the one, and by the influence of air and moisture on the other, in a state of motion. In this latter condition the vital force manifests itself as a cause of growth in the living animal tissue, and as a cause of resistance to external agencies tending to alter the form and composition of the substance of the tissue, which, simply as a chemical compound, it did not

possess. It destroys the force of attraction exerted between the molecules of food, allowing them to enter into new arrangements identical with those of the living tissues, or differing from them. Again, it appears as a force of attraction, since the compound formed by the new arrangement, when identical with the living tissue combines with and becomes a part of it. The manifestations of the vital force depend upon the form and constitution of the tissue in which it resides; they are also dependent upon temperature and upon a certain amount of food. The manifestations of chemical forces depend upon a certain order in which the elementary particles are united. An analogy is readily perceived in this respect, with the phenomena of vitality; if the form of the body is destroyed, or the arrangement of the elementary particles altered, all vitality immediately ceases; it is inseparable from matter.

There is nothing to prevent us from considering the vital force as a peculiar property, which is possessed by certain material bodies, and becomes sensible when their elementary particles are combined in a certain arrangement or form. Considered in this view the changes which make up the totality of life may be investigated, and the laws which regulate them ascertained, as those which govern the chemical or physical condition of matter. This investigation cannot be conducted as rapidly or as satisfactorily as those just mentioned, so numerous and complicated are the causes acting at each moment of the pursuit; still in some cases we arrive at a degree of certainty, little short of that belonging to the laws of mechanics or chemistry. "Under this form the vital force unites in its manifestations all the peculiarity of chemical forces, and of the not less wonderful cause, which we regard as the ultimate origin of electrical phenomena. When, by the act of manifestation of the energy in a living part, the elements of the food are made to unite in the same form and structure as the living organ possesses, then these elements acquire the same powers. By this combination, the vital force inherent in them is enabled to manifest itself freely, and may be applied in the same way as that of the previously existing tissue."

The manifestations of life in vegetables, are shown in increase of mass and development, and these, as vegetable physiologists and chemists have established, are accompanied by, and depend upon an elimination of oxygen, which is separated from the other component parts of their nourishment. On the other hand, the same phenomena in animal life are accompanied by an absorption of oxygen of the air, and by its combination with the component parts of the animal body. Vegetables appropriate no part of an organised being, until it has first undergone the process of putrefaction and decay, and assumed the form of inorganic matter. Animals require parts of organised beings for their support and development; they are also distinguished from vegetables by the faculty of locomotion, and in general, by the possession of senses. The existence of the faculties, and the use of them, depend upon certain parts never found in vegetables. The phenomena of motion and sensation, depend upon certain kinds of apparatus, which have no other relation to each other than this, that they meet in a common centre. Everything in the animal organism, to which the name of motion can be applied, proceeds from the nervous apparatus. While all the phenomena of motion in vegetables, depend upon physical and mechanical causes. They have no nerves. Assimilation goes on in the same way in animals as in vegetables; the same cause determines

the increase of mass in both. This, which constitutes true vegetative life, manifests itself in vegetables with the aid of external influences; in animals by means of influences which exist within the organism. Although we must admit that digestion, circulation, secretion, are under the influence of the nervous system, yet the force which gives the wonderful properties observed in the germ, the leaf, and the radical fibres of the vegetable, is the same as that enabling the most complex animal organ to perform its function. That increase may take place in the animal organism, contact with the substances to be appropriated is required; this is effected by means of a peculiar circulating fluid, for some of the elements of which each cell and organ have an affinity. Physiology teaches that all parts of the body were originally contained in the blood. Every action of the body involves waste; Liebig even goes so far as to assert, that *every mental affection* is followed by chemical change.

"The most ordinary experience further shows, that at each moment of life, in the animal organism, a continual change of matter, more or less accelerated, is going on; that a part of the structure is transformed into unorganised matter, loses its condition of life, and must be again renewed. Physiology has sufficiently decisive grounds for the opinion, that every motion, every manifestation of force, is the result of a transformation of the structure or its substance; that every conception, every mental affection, is followed by changes in the chemical nature of the secreted fluids; that every thought, every sensation, is accompanied by a change in the composition of the substance of the brain."—P. 8.

This conclusion, to which many would not at first yield assent, is still, as we shall see further on, strictly in accordance with facts, connected with the other tissues of the body, which are indisputable.

To keep up the integrity and functions of parts, thus continually undergoing change, another process must exist, that of supply; the matter appropriated for this purpose, is in all cases a part of an organized being. The consideration of nutrition and reproduction constitutes the second section of Liebig's Report.

If we consider the first condition upon which animal life depends to be assimilation of food, the second is the absorption of oxygen from the air; the phenomena of life are exhibited in the combination constantly going on in the animal body, under the influence of vital force, between the oxygen of the air and food. And it is from the mutual action that all vital activity arises. During the process of nutrition, matter passes from a state of motion to that of rest, (static equilibrium,) to be again set in motion, under the influence of the nervous system. The causes of these conditions of the vital force are chemical forces. Rest is the result of the affinity between the particles of matter; motion arises from the changes taking place in the food, or in the different tissues of the body, the results of decomposition, just as in the closed galvanic circuit, changes taking place in a metal in contact with acid, produce phenomena which we attribute to electricity, so changes undergone by matter constituting the animal organism, produce motion and activity, which we call vitality. This is the point, and no other, from which chemistry should contemplate the phenomena of life. The formation of a crystal is an enigma as well as the formation of an eye, alike difficult to solve.

Taking the view of the animal economy here suggested, we have immediately before us certain striking facts. An adult man receives into his system a certain quantity of food, and at the end of twenty-four hours he

has neither increased nor diminished in weight; during the same time he has also taken into his system a very considerable amount of oxygen. None of this oxygen remains in the system, but is given out again in the form of a compound of carbon or of hydrogen, obtained from the tissues of the body, into combination with which the oxygen has entered. According to Lavoisier and Seguin, the amount of oxygen consumed daily is $32\frac{1}{2}$ oz., and the amount of carbon contained in the food of an adult man for the same time is 13.9 oz.; this amount of carbon escapes from the skin and lungs as carbonic acid gas, and to convert it into the state of gas, 37 oz. of oxygen are required. It is readily seen that, as no part of the oxygen escapes from the body, except as a compound of carbon or of hydrogen, and as these last must be replaced by the food, that the amount of nourishment must be in a direct ratio to the amount of oxygen consumed. Observation confirms what is here stated. The number of respirations is in proportion to the oxygen taken into the system; hence, a labouring man requires more food than one who takes but little exercise; the bird, whose respiration is rapid, requires more food than the serpent, which can fast for three months, and whose hourly consumption of oxygen can hardly be detected. The amount of oxygen contained in the expanded air of summer is less, bulk for bulk, than that of winter; hence the reduction of carbon noticed in the food of those living in warm climates. It is also worthy of notice, that the fruits preferred by the inhabitants of the south, contain but 12 per cent. of carbon, while the blubber and train oil of the arctic regions contain from 66 to 80 per cent. of the same element.

Since the increase of mass in the animal body depends upon the ingredients of the blood, only those substances can be considered as nutritious which are capable of being converted into blood. The composition, then, of the food must be examined and compared with the ingredients of the blood. In considering this fluid we find two chief ingredients, the fibrine, which is identical in all its properties with muscular fibre, when the last is purified from all foreign matters, and the albumen, which is contained in the serum, and is identical with the white of eggs. "Fibrine and albumen contain seven chemical elements, among which are nitrogen, phosphorus, and sulphur; they contain, also, the earth of bones. The serum retains in solution sea salt, and other salts of potash and soda, in which the acids are carbonic, phosphoric, and sulphuric." It is not a little remarkable that chemistry has proved that the two chief ingredients of blood, fibrine and albumen, contain the same organic elements in the same proportion, but arranged in a different order, as the difference in their external properties sufficiently show. Fibrine has also been converted into albumen, or, at least, into a substance having the solubility and coagulability by heat which are the characteristic properties of that substance. These two substances may be converted, by the process of nutrition, into muscular fibre, and this last can be reconverted into blood.

"All parts of the animal body which have a decided shape, which form parts of organs, contain nitrogen; they also contain carbon and the elements of water, although not in any case in the proportion to form water. The chief ingredients of blood contain about 17 per cent of nitrogen, and no part of an organ contains less than this. Experiments prove that the animal body cannot produce either of the elementary bodies above mentioned, carbon or nitrogen, from substances which do not contain it, neither is nitrogen absorbed from the atmosphere in the vital process."

This point is strongly insisted upon by Dumas in his lectures; he does not admit that absorption ever takes place; on the other hand, as has been remarked by Despretz, the constant phenomenon is the exhalation of this gas. Indeed, the confusion with regard to the results formerly obtained by different experimenters on the subject, left us in doubt whether nitrogen is influenced by respiration in any way. Sir H. Davy and Cuvier both believed that absorption took place to some extent; Dr. Edwards arrived at the conclusion that both exhalation and absorption occurred, although under different circumstances, dependent principally upon change of temperature. The latest experiments are those of Dulong and Despretz, and they have furnished us with evidence which is irresistible, in at least two hundred experiments made by them personally on the respiration of animals, exhalation was in every instance observed. Water and fat are destitute of nitrogen, and they are unorganized, and only so far take place in the vital process, that their presence is required for the due performance of the vital functions. Nutrition in the carnivora, we can readily see, is more simple than in the herbivora who take elementary particles from substances apparently dissimilar. But a discovery has been made with regard to the composition of vegetables, which greatly simplifies the process of nutrition in the class of animals last mentioned. It has been determined that fibrine, albumen, and caseine, in the animal kingdom, are represented by substances bearing the same names in the vegetable kingdom, and which are exactly identical with them in the proportion of their elements; they also very closely resemble them in many of their properties. The clarified juice of turnips, for instance, it is absolutely impossible to distinguish when boiled, and thereby coagulated, from the white of egg diluted with water, and heated to the same point. The three compounds mentioned above, are the true nitrogenized constituents of the food of graminivorous animals; all other nitrogenized substances in plants are rejected by animals, as is the case with the characteristic principles of medicinal plants, whenever they exist in sufficient quantity to have any influence, as regards the increase of mass in the body. We see then that the vegetable principles, which in animals are used to form blood, contain its chief constituents, fibrine and albumen, ready formed, as far as regards their composition. The iron, which is found in the blood, is also found to exist in plants. The animal organism, then, gives to blood only its form, it does not create it from other substances, which do not contain its constituents. It produces new compounds from the constituents, differing from them in composition, but the constituents themselves it cannot produce. In the section on the nutrition of carnivora, Liebig enters more into detail, as it exhibits the process in the two great classes of animals in a manner more readily understood. On examining the substances expelled from the adult serpent, after devouring a rabbit, goat, or bird, we find that the horns, hoofs, hair, feathers, and bones pass unchanged, that they are dry, and all parts capable of solution are absorbed. It is to be observed, also, that when the serpent has regained its original weight, all other parts of the prey have disappeared. The only excrement is that from the urine, which, when dry, affords urate of ammonia; in it, for every equivalent of nitrogen there are two equivalents of carbon. But, in the muscular fibre, blood, membranes, and skin, consumed, the amount of carbon is eight to one of nitrogen, and, if we have regard to the fat and nervous substance, even more. Now, if the urate of ammonia expelled contained all the nitrogen of the animal, at least six equi-

valents of carbon, combined with it, must have escaped through the skin and lungs as oxidized products, as carbonic acid and water. Had the animal food been burned, the same results would have followed, but more slowly. The nitrogen would have appeared with a part of the carbon and hydrogen as carbonate of ammonia, and the remaining carbon and hydrogen would have been given off, as in the animal, in the form of carbonic acid and water, while the ashes and soot would represent the incombustible and imperfectly burned parts of the food. We must not, however, suppose that the oxidized products are given off directly from the food consumed; this would imply that the only object in taking food was their production. The object of food is the restoration of the waste of matter. Certain parts of organs have lost their vitality—have been metamorphosed into amorphous and unorganized combinations, and these are expelled. Exactly as much carbon and nitrogen are supplied by the blood, and, consequently, by the food, as is lost by the waste of matter attendant on the exercise of the functions of the organs. Whenever a portion of matter is thrown off by the tissues, it is immediately carried away by the blood toward the heart.

“These compounds cannot be employed for the reproduction of those tissues from which they are derived. They pass through the absorbent and lymphatic vessels into the veins, where their accumulation would speedily put a stop to the nutritive process, were it not that the accumulation is prevented by two contrivances adapted expressly to this purpose, and which may be compared to filtering machines. The venous blood, before reaching the heart, is made to pass through the liver; the arterial blood, on the other hand, passes through the kidneys; and these organs separate from both all substances incapable of contributing to nutrition. Those new compounds which contain the nitrogen of the transformed organs are collected in the urinary bladder, and being utterly incapable of any further application in the system, are expelled from the body. Those, again, which contain the carbon of the transformed tissues, are collected in the gall-bladder, in the form of a compound of soda, the bile, which is miscible in water in every proportion, and which, passing into the duodenum, mixes with the chyme. All those parts of the bile which, during the digestive process, do not lose their solubility, return during that process into the circulation, in the state of extreme division. The soda of the bile, and those highly carbonized portions which are not precipitated by a weak acid (together making ninety-nine-hundredths of the solid contents of the bile), retain the capacity of resorption by the absorbents of the large and small intestines; nay, this capacity has been directly proved by the administration of enemata containing bile, the whole of the bile disappearing with the injected fluid in the rectum. Thus we know with certainty, that the nitrogenized compounds produced by the metamorphosis of organized tissues, after being separated from the arterial blood by means of the kidneys, are expelled from the body as utterly incapable of further alteration, while the compounds rich in carbon, derived from the same source, return into the system of carnivorous animals.”—P. 58.

The oxygen, conveyed by the blood to the different parts of the body, meets with the compounds produced by the transformed tissues and unites with their carbon and hydrogen, forming carbonic acid and water. All that in this way does not suffer oxidation, is sent back into the circulation as bile, and gradually disappears. Hence as all the carbon of the tissues, and all the carbon of the bile, disappears in one of the forms just mentioned, through the skin and lungs, it follows that the elements of the bile serve for respiration and the production of animal heat. “If the excrements of a carnivorous animal be treated with water it will extract from them no bile,

although it is extremely soluble and mixes in every proportion with it. The bile then is all consumed in the animal body." The view here taken of the uses of the bile, and the fact stated that no bile exists in the excrements, are entirely at variance with the generally received opinions of physiologists. It is well known that when the ductus choledochus is tied, constipation takes place, and the feces change colour. One of the latest authorities in physiology assures us that there can be no question, that by far the largest portion is destined to be entirely thrown off, and it would seem from the character of its proximate elements, as if it were destined to remove from the blood its superfluous hydro-carbon, whether this have been absorbed as such from the aliment, or have been taken up by the blood as effete matter, during the course of the circulation. Bostock taught, that various pathological considerations would induce us to regard the bile as essentially an excrementitious substance, although in conformity with other operations in the animal economy, it is probable that some other purposes are served by it. It is a question worthy of consideration, whether the elements of the bile may not be combined in a different way, as in the case of cholic, choleic, and cholidic acid, the combined elements of which make up the bile, and thus escape detection in the feces. The origin of the bile and urine are evidently from the transformed tissues, since the secretion goes on while the animal is deprived of food, and during the winter sleep of those that hibernate. The urine is also evidently increased by exercise which increases the amount of metamorphosed tissue. In the adult carnivora, since it neither gains nor loses weight from day to day, the nourishment and waste of tissues must be equal. In the young of the same class of animals the weight increases; here, we must suppose the process of assimilation is more active than that of transformation. But the consumption of oxygen is greater, bulk for bulk, than in the adult; the motion of the blood also is more rapid, the substance of its organized parts would, therefore, undergo a more rapid consumption and yield to the action of oxygen, if the carbon and hydrogen were not supplied from another source; this source is found in the milk of the mother. The carbon and hydrogen of the butter, and the carbon of the sugar of milk, are consumed in the respiratory process and given out as carbonic acid and water. It is in consequence of these substances, which have no other office than to prevent the action of oxygen, that growth takes place. It is not, however, from their assimilation that increase ensues, for they contain no nitrogen. The substance which is assimilated and becomes a part of the living tissue, is the caseine of the milk, which analysis shows to be identical with fibrine and albumen. To convert it into blood no foreign substance is required. It is also found to contain a much larger proportion of the earth of bones, than that fluid, in a soluble form in which it can reach every part of the growing body.

The graminivora, during their whole life, depend on substances having a composition identical with, or closely resembling sugar of milk. Everything consumed by them as aliment contains starch, sugar, or gum. The first named substance, starch, is the most widely extended, and, as is well known, may be converted into a kind of sugar, known as grape sugar, either by the process of germination, or by strong acids. This change depends, according to analysis, upon the addition of the elements of water; no carbon is separated, and nothing added, but the oxygen and hydrogen. A close connection thus exists between sugar and starch. Another kind of

sugar, sugar of milk, also resembles starch; it is incapable of the vinous fermentation by itself, but, when heated with a substance in a state of putrefaction, will resolve into carbonic acid and alcohol. Gum, the third substance mentioned, has the same composition as cane sugar, but, unlike sugar of milk, does not resolve itself into carbonic acid and alcohol when placed in similar circumstances. For the same number of equivalents of carbon 12, the number of equivalents of water will be in starch 10, cane sugar and gum 11, sugar of milk 12, grape sugar 14.

The part performed by the substances above mentioned, in the vital process of the graminivora, is very similar to that performed by the butter and sugar of milk of the young carnivora. The amount of carbon consumed by the graminivora in the nitrogenized constituents of food is exceedingly small, when compared with the oxygen absorbed by the lungs and skin. The horse, which can be maintained in good condition on 15 lbs. of hay and $4\frac{1}{2}$ lbs. of oats daily, obtains from this amount of food but $4\frac{1}{2}$ oz. of nitrogen, and $14\frac{1}{2}$ oz. of carbon; of this last only about 8 oz. can be consumed in respiration, since, with the nitrogen expelled in the urine, there are 3 oz. combined as urea, and $3\frac{1}{2}$ oz. of hippuric acid. But, according to the observations of Boussingault, a horse expires about 79 oz. of carbon daily. He receives then about one-fifth of what is required for the respiratory process. The remaining four-fifths must be supplied in other substances, or his organism will be destroyed by the action of the oxygen; this supply is found in the sugar, gum, and starch. If we apply the principle here set forth, to the nourishment of man, we shall see that a very close connection exists between agriculture and the multiplication of the human species. A nation of hunters obtain the carbon for respiration from the flesh and blood of animals, which take the place of starch and sugar. But it is proved by chemical analysis, that 13 lbs. of flesh, contain no more carbon than 4 lbs. of starch; hence, an individual with one animal and an equal weight of starch, could maintain life five times the number of days that he could if confined to the same weight of flesh alone.

"Man, when confined to animal food, respire, like the carnivora, at the expense of the matters produced by the metamorphosis of organized tissues; and, just as the lion, tiger, hyena, in the cages of a menagerie, are compelled to accelerate the waste of the organized tissues by incessant motion, in order to furnish the matter necessary for respiration; so, the savage, for the very same object, is forced to make the most laborious exertions, and go through a vast amount of muscular exercise. He is compelled to consume force merely in order to supply matter for respiration."—P. 75.

Cultivation has for its object the production of a maximum of the substances, but suited for assimilation and respiration, in the smallest possible space. When this is accomplished no such waste of motion will be required to obtain the means of respiration as has just been mentioned. Cultivation economizes both force and nutriment.

In comparing the urine of the carnivora with that of the graminivora, it is obvious, that transformation of tissue differs both in form and rapidity, in the two classes of animals. The urine of the carnivora contains phosphates and sulphates; since the fluids contain only traces of these substances, and since all the tissues, except cellular tissues, and membranes, contain phosphoric acid and sulphur, they must be derived from the tissues. In the graminivora, on the other hand, we find alkaline carbonates in abun-

dance, but a very small proportion of alkaline phosphates; whence we infer that the tissues which supply these last are very slowly transformed.

Turning to the assimilative process, we find it exhibiting a very marked difference in the two classes. Carnivorous animals devour their prey only when urged by hunger. They require less food for their support, because their skins have no respiratory pores, and, consequently, they lose less heat than the graminivora. These last eat almost without interruption through the day; their system has the power of converting into organized tissue all the food devoured, beyond what is required to repair the waste of the organism; consequently, they become plump while the flesh of the carnivora is tough and sinewy. It is well known that animals become fat, in which the process of cooling and exhalation are diminished by preventing motion. This occurs in consequence of the absorption of less oxygen, than is required to convert all the carbon of the substances destined for respiration into carbonic acid. The excess of carbon, with the exception of a small portion expelled from the body in the form of hippuric acid, is employed in the production of fat. Hence, it is evident, that the formation of this substance, depends upon the want of due proportion between the food and the oxygen. This proportion can be varied in another way, by providing for the carnivorous animal, for instance, food containing no nitrogen, such as gum, starch, sugar. According to the analysis of Chevreul, human fat, mutton fat, and hog's lard, contain the same relative proportion of carbon and hydrogen, as sugar, gum, and starch; these last can be converted into a substance having exactly the composition of the former by a separation of a portion of their oxygen. Consequently, a very remarkable connection exists between the formation of fat and the respiratory process. The oxygen, set free in the formation of fat, is given out in combination with carbon or hydrogen; these must have generated, in the formation of carbonic acid and water, as much heat as would have been produced by burning the carbon and hydrogen in oxygen gas.

We have seen, in what precedes, that no nitrogenized compound, the composition of which differs from that of fibrine, albumen, and caseine, is capable of supporting life. Animals can form from their blood all parts of their bodies, but all the materials must exist in the blood ready prepared, in every thing but the form. It is in consequence of the difference of composition between fibrine and albumen, and gelatine, that the last cannot be used for a vital process. It is true that a small portion of this substance must exist in the blood, but the demand for it in the system is small, since, in a starving or sick individual, we find that the tendons and those parts which are held together by the gelatinous tissues, still retain their connections, even after the fat disappears, and the muscular tissue takes the form of blood. Experience, however, proves that to the diseased, gelatinous substances are useful as a means of nourishment. It is not improbable that it is dissolved in the stomach, and forms a part of the blood, repairing the waste of tissues similar to itself, and saving the weakened vital powers the labour of forming it from the albumen, fibrine, or caseine. The experience of the Committee on Gelatine, appointed by the French Academy, has decided conclusively, that this substance cannot support life when used as the only food.

Metamorphosis of Tissues.—The second part of the report is upon the metamorphosis of the tissues. The mode in which these parts are formed from the constituents of the blood is pointed out, and the changes they un-

dergo before being eliminated from the body. It is well known to chemists that many compounds exist, both nitrogenized and non-nitrogenized, which, with the same composition in one hundred parts, offer very different external characters. A group of three exists in the case of albumen, fibrine, and caseine. They contain the same proportion of organic elements, although differing in external characters. When either of these substances is dissolved in a solution of potash, and exposed to a high temperature, it is decomposed; if now to this solution acetic acid be added, a gelatinous translucent precipitate is formed, which is precisely the same in character and composition, from whichever of the three it is formed. Further than this, it is found that the precipitate contains the same organic elements, and in exactly the same proportion, as the animal matters from which it is prepared. This substance has been called by Mulder, the discoverer, *proteine*. The chief constituent of the blood and the caseine of milk, may be regarded as compounds of phosphates and other salts, and of sulphur and phosphorus, with a compound of carbon, nitrogen, hydrogen, and oxygen, in which their relative proportion are invariable. Viewed in this light, *proteine* is the commencement of the tissues, because these are all produced from the blood. It has also been ascertained that vegetable fibrine, caseine, and albumen, treated like the same animal substances, also yield *proteine*; hence vegetables are the producers of all the *proteine*, which, when developed by the vital force, and the influence of oxygen and hydrogen, form all the organs and tissues of the animal body. To this we shall readily yield assent, when we consider the development of the chick in the egg. The egg contains no other nitrogenized compound except albumen; the yolk contains the same substance with the addition of a little fat, in which cholesterine and iron may be detected. Now, from these substances, with the addition of oxygen, all the various parts of the young fowl are formed. Hence albumen is the essential substance, and all nitrogenized articles of food, whether derived from the animal or vegetable kingdom, are first converted into this substance before they can become nourishment for animals. All food becomes soluble in the stomach and capable of entering into the blood. In this process of solution the oxygen of the air, and a fluid secreted by the stomach, are the only agents. The oxygen, Liebig supposes, to be introduced into the stomach by means of the *saliva*. This he considers peculiarly adapted for entangling the air in the form of froth, and conveying it with the food to the stomach, where the oxygen combines with the food, and the nitrogen escapes through the skin and lungs. An argument in favour of this supposition may be drawn from the fact, that the herbivora both swallow with the saliva more air, and expire more nitrogen than the carnivora; they also expire more when taking food than when fasting. However this may be, it is certainly quite as plausible a theory as any which has been broached to account for this fluid; it certainly must perform some office in the digestive process, or it would not be secreted in so large a quantity, just at the time when the food is passing to the stomach. The process of digestion is so clearly, and, as it seems to us, so accurately described by our author, that we shall extract what he says upon the subject entire.

“The most decisive experiments of physiologists have shown, that the process of chymification is independent of the vital force; that it takes place in virtue of a purely chemical action, exactly similar to those processes of decomposition or transformation which are known as putrefaction, fermentation, or

decay, (eremacausis). When expressed in the simplest form, fermentation or putrefaction may be described as a process of transformation,—that is a new arrangement of the elementary particles, or atoms, of a compound, yielding two or more new groups or compounds, and caused by contact with other substances, the elementary particles of which are themselves in a state of transformation or decomposition. It is a communication, or an imparting of a state of motion, which the atoms of a body in a state of motion are capable of producing in other bodies, whose elementary particles are held together only by a feeble attraction. Thus the clear gastric juice contains a substance in a state of transformation, by the contact of which with those constituents of the food, which, by themselves, are insoluble in water, the latter acquire, in virtue of a new grouping of their atoms, the property of dissolving in that fluid. During digestion, the gastric juice, when separated, is found to contain a free mineral acid, the presence of which checks all further change. That the food is rendered soluble quite independently of the vitality of the digestive organs, has been proved by a number of the most beautiful experiments. Food enclosed in perforated metallic tubes, so that it could not come into contact with the stomach, was found to disappear as rapidly, and to be as perfectly digested as if the covering had been absent; and fresh gastric juice out of the body, when boiled white of egg, or muscular fibre, were kept in contact with it for a time at the temperature of the body, caused these substances to lose the solid form and to dissolve in the liquid. It can hardly be doubted that the substance, which is present in the gastric juice in a state of change, is a product of the transformation of the stomach itself. No substances possess, in so high a degree as those arising from the progressive decomposition of the tissues containing gelatine or chondrine, the property of exciting a change in the arrangement of the elements of other compounds. When the lining membrane of the stomach of any animal, as, for example, that of the calf, is cleaned by continued washing with water, it produces no effect whatever, if brought into contact with a solution of sugar, with milk, or other substances. But if the same membrane be exposed for some time to the air, or dried, and then placed in contact with such substances, the sugar is changed, according to the state of decomposition of the animal matter, either into lactic acid, into mannite and mucilage, or into alcohol or carbonic acid; while milk is instantly coagulated. An ordinary animal bladder retains, when dry, all its properties unchanged; but when exposed to air and moisture, it undergoes a change not indicated by any obvious external signs. If, in this state, it be placed in a solution of sugar of milk, that substance is quickly changed into lactic acid. The fresh lining membrane of the stomach of a calf, digested with muriatic acid, gives to this fluid no power of dissolving boiled flesh or coagulated white of egg. But if previously allowed to dry, or if left for a time in water, it then yields to water acidulated with muriatic acid, a substance in minute quantity, the decomposition of which is already commenced, and is completed in the solution. If coagulated albumen be placed in this solution, the state of decomposition is communicated to it, first at the edges, which become translucent, pass into a mucilage, and finally dissolve. The same change gradually affects the whole mass, and at last it is entirely dissolved, with the exception of fatty particles, which render the solution turbid. Oxygen is conveyed to every part of the body by the arterial blood; moisture is everywhere present; and thus we have united the chief conditions of all transformations in the animal body."

To some, perhaps, the idea suggested by the term eremacausis will be that of fermentation, similar to what takes place in sugar and animal substances, and which is accompanied by the disengagement of gas. But it must be borne in mind that there are many cases of complete changes in the arrangement of the elements of a compound without the disengagement of any gas whatever. It is this last which bears a resemblance to the process of digestion. The fact that all substances which can arrest the phe-

nomena of fermentation and putrefaction in liquids, also arrest digestion when taken into the stomach, adds not a little to the probability that the two processes are similar. The free acid found in the gastric juice is the muriatic. This acid is derived from common salt, which is an important agent in converting fibrine and caseine into blood; its power of dissolving bone earth is remarkable, its action upon acetic acid is equal to that of lactic acid, consequently, the necessity formerly supposed for this last acid does not exist. Iron also has been found in the gastric juice, which undoubtedly plays an important part in the formation of the blood.

The formula for Proteine, which is the result of the best analyses expressed in equivalents, is C. 48, H. 36, N. 6, O. 14; and this is also the relative proportion of the organic elements of the blood. Albumen and fibrine contain besides these elements sulphur and phosphorus, the former more sulphur than the latter; and caseine contains besides proteine, sulphur. The state in which sulphur and phosphorus exist in these substances is not well known, nor the exact quantity. From albumen and fibrine all the tissues of the body are formed in one of two ways, either, by the addition, or subtraction, of certain elements. As an example of the changes which may take place in the formation of the various organic substances, the following table is given derived from the researches of Mulder and Scherer. In this table the phosphorus and sulphur are not given in equivalents, but in their relative proportions in the different tissues.

Composition of Organic Tissues.

Albumen	C. 48, N. 6, H. 36, O. 14+P+S.
Fibrine	C. 48, N. 6, H. 36, O. 94+P+2 S.
Caseine	C. 48, N. 6, H. 36, O. 14+S.
Gelatinous tissues, tendons . .	C. 48, N. 75, H. 41, O. 18.
Chondrine	C. 48, N. 6, H. 40, O. 20.
Hair, horn	C. 48, N. 7, H. 39, O. 17.
Arterial membrane	C. 48, N. 6, H. 38, O. 16.

From the table it appears, that when proteine passes into chondrine, the elements of water have been added with oxygen, and, that for the same amount of carbon all the tissues contain more oxygen than the constituents of blood. In the gelatinous membranes, it is to be observed, nitrogen has been added as well as hydrogen, in the proportions to form ammonia. The production of the compounds derived from the blood may be explained in two ways. One is from albumen by the addition of oxygen, of the elements of water, of those of ammonia, accompanied by the separation of sulphur, and phosphorus; the other from proteine by the separation of carbon. The last is the most probable.

It is not a little remarkable that the true formula for the bile, and the key to its metamorphoses, under the influence of acids and alkalis, have been found by means of the view taken by Liebig in the transformation of the tissues. It is perfectly evident, that if the existing organs are derived from the blood and are continually undergoing change under the influence of oxygen in it, that the animal secretions must contain the products of this change in the organs. It has been stated that the bile contains the products of transformation containing the most carbon, and the urine those containing the most nitrogen, consequently, the sum of these elements must make up the proportion of these same elements in the blood. If then we subtract from the elements of blood, those of urine and the oxygen and water, which were added during the transformation of the organs, we

shall have the bile; or, if we reverse the process we shall obtain the composition of the urate of ammonia of the urine. The formula for blood and flesh, according to Playfair and Boeckman, is C. 48, N. 6, H. 39, O. 15. The chief constituent of the bile is choleic acid, and if we subtract from its elements the products formed by the action of muriatic acid, ammonia and taurine, we obtain the empirical formula for choloidic acid. If from the formula of choleic acid we subtract the elements of urea and two atoms of water we shall have the formula for cholic acid. So close is the coincidence between these formulæ and actual analysis that there can be no doubt that the true formula of choleic acid has been obtained. If now to choleic acid, which we must recollect represents the constituents of the bile, we add the chemical equivalents of the neutral urate of ammonia, or the urine of serpents, we shall have a formula expressing the composition of the blood with the addition of one equivalent of oxygen and one of water. And, again: if we add to the elements of proteine three equivalents of water we obtain exactly the same formula, with the exception of one equivalent of hydrogen, and this last is the only difference between the formula thus obtained and that given by adding the urate of ammonia to choleic acid. It seems to us that it is thus clearly demonstrated, that the metamorphosis of tissues takes place in the manner pointed out by Liebig, and that choleic acid with urate of ammonia are the results of this metamorphosis. The form of metamorphosis here indicated is that belonging to the lower classes of amphibia and perhaps to worms and insects. The disappearance of uric acid in the higher classes of animals and its replacement by urea depend upon the oxygen absorbed during respiration and the water consumed. In proof of this, it may be mentioned that in the mulberry calculi we find oxalate of lime, and in others urate of ammonia, and this always in persons who take so little exercise that the supply of oxygen has been diminished. Uric and oxalic acid calculi are not found in phthisical patients. The quantity of uric acid and urea depends in no degree upon the food, since a starving man labouring much secretes more urea than another freely nourished but remaining at rest. The urine of the herbivora contains ammonia, urea and hippuric or benzoic acid, but no uric acid; the existence of benzoic or hippuric acid depending upon the quantity of carbon, and consequently upon the amount of motion. Animals that consume much water keep the uric acid, which is sparingly soluble, in a state of solution, whereby the oxygen readily acts upon it and transforms it into carbonic acid and urea. In birds, on the other hand, which drink but seldom, uric acid appears in the urine, notwithstanding the rapidity of respiration and increased supply of oxygen. In the fœtal calf, the transformation of the tissues is effected through the blood of the mother, which affords the proteine. Here it appears that two atoms of proteine with the addition of nothing except two atoms of water, contain the elements of six atoms of allantoine and one atom of chloidic acid, or meconium. But allantoine contains the elements of uric acid and urea; hence we see that the relation between the allantoine of the fœtal calf and proteine, corresponds with that of the constituents of the urine in animals which breathe to their nourishment.

We have spoken above of the origin of bile in the carnivora, but in the herbivora the quantity of the bile is often much too great to be afforded by the tissues themselves. It is ascertained, for example, that of 59 oz. of dry bile secreted by the ox, $2\frac{1}{2}$ oz. is nitrogen. Now, if this nitrogen pro-

ceeded from the metamorphosed tissues, and all their carbon passed into the bile, it would yield an amount of bile corresponding to 7.15 oz. only of carbon. Hence other substances must take part in the formation of bile, and these are the non-nitrogenized parts of the food, starch, sugar, gum, &c. If, as has been stated by Ure, benzoic acid, when administered internally, appears as hippuric acid in the urine, it would seem that the act of transformation of the tissues takes a new form with respect to the resulting products under the influence of matters used as food. It may be remarked that fat forms more rapidly when no salt is present in the food; and that a compound of sodium in some form is necessary for the production of bile. The presence of muriatic acid in the stomach, and soda in the blood, also go to show the importance of common salt in the organic processes. In the carnivorous animal, the soda in the blood, which is only what is necessary to form the blood, is sufficient to form bile with the products of the tissues; but in the herbivora, the quantity of bile is so great that it cannot be obtained otherwise than directly from the food; their organism must have the power of combining all the soda in the food directly in the bile. We cannot, therefore, consider the existence of alkalies in plants accidental, for besides finding them in the bile, their presence is indispensable for the production of the first food of the young animal; without potash, the production of milk would be impossible.

From many facts we are warranted in the conclusion that there are substances which, although they may not become parts of the tissues, are still capable of playing a part in certain vital processes; there are others which exercise an influence on the nutritive process and on transformation of tissues, although they take no part in the changes which ensue. There are always substances which have a power of communicating the change going on in their own particles to parts of the system capable of undergoing the same change.

Another class of substances exists, consisting of the medicinal and poisonous compounds, the elements of which are capable of taking a direct or indirect share in the processes of secretion and transformation. Of these there are three kinds: first, those which unite chemically with the tissues or constituents of the body, the vital force being incapable of destroying the resulting compound. Secondly, those which impede or retard those combinations, called fermentation and putrefaction when taking place out of the body, to which certain complex organic molecules are liable. To this class belong essential oils, camphor, empyreumatic substances, and antiseptics. Thirdly, medicinal substances, the elements of which take a direct share in the changes going on in the animal body, although they are not nutritive, nor are they employed by the organism in the production of blood. They all produce a marked effect in a comparatively small dose, and many in a larger dose are poisonous. They are probably not decomposed when taken into the stomach, but if insoluble are rendered soluble, that they may enter the circulation, and there alter the quality of the blood. As regards the *modus operandi* of this class of medicinal agents, we must conclude that their elements either take a share in the formation of certain constituents of the body, or in the production of certain secretions. One example of the influence of substances on the secretions has been given in that of starch on the secretion of bile in the herbivora. Our knowledge with regard to the composition of the different secretions, except that last mentioned, is limited; we do know, however, that all of them contain ni-

trogen chemically combined; they all yield ammoniacal products. It is to be noticed, that of the medicinal or remedial agents, those containing nitrogenized vegetable principles, whose composition differs from that of the nitrogenized elements of nutrition, are distinguished for their powerful action on the animal economy. These effects vary from the mildest form of the action of aloes to that of the most terrible poison, strychnia. No remedy devoid of nitrogen possesses a poisonous action in a similar dose. The poisonous action, however, is not in proportion to the nitrogen, although it is not independent of it. Solanine and picrotoxine, which contain least, are powerful poisons. In the substance last mentioned, the quantity of nitrogen is so small, that it had been overlooked, until, in consequence of the general law above mentioned, it was again examined and detected. Quinia contains more nitrogen than morphia. Caffeine and theobromine, the most active principles of coffee and the cacao-bean, the most highly nitrogenized of all vegetable substances, are not poisonous.

The other nitrogenized vegetable principles, quinine, alkaloids of opium, &c., appear to act upon the brain and nervous system chiefly, and not, as those just mentioned, upon the secretions. They accelerate, retard, or alter, in some way, the phenomena of motion in animal life. The fact, that these substances are material, tangible and ponderable; that they disappear in the system; require repetition and increase of dose if we would repeat and increase the effect; lead us, when viewed chemically, to the supposition that their elements take a share in the formation or transformation of brain and nervous matter.

"However strange the idea may, at first sight, appear, that the alkaloids of opium or of cinchona bark, the elements of codeine, morphia, quinine, &c., may be converted into constituents of brain and nervous matter, into organs of vital energy, from which the organic motions of the body derive their origin; that these substances form a constituent of that matter, by the removal of which the seat of intellectual life, of sensation and consciousness, is annihilated; it is nevertheless, certain, that all these forms of power and activity are most closely dependent, not only on the existence, but also on a certain quality, of the substance of the brain, spinal marrow, and nerves; insomuch that all the manifestations of the life or vital energy of these modifications of nervous matter, which are recognised as the phenomena of motion, sensation, or feeling, assume another form as soon as their composition is altered."—P. 173.

The animal organism has produced the substance of the brain and nerves from vegetable principles, entering into the formation of proteine, either alone, or, aided by the elements of non-azotized food, or the fat formed from it; consequently, it is not improbable that other vegetable constituents, intermediate between the fat and compounds of proteine, may also be appropriated by the organism. It may give us some hint as to the mode of action of these substances, to know that *cerebric acid*, the peculiar acid of the fat of the brain, approaches more nearly in its composition to choleic acid than any other. Brain and nervous matter is, certainly, formed, either by the separation of a highly azotized compound from the elements of the blood, or by the combination of an azotized product of the vital process with a non-azotized compound, and that, probably, a fatty body. There can be no manner of doubt, that the production of nervous matter from blood requires a change in the composition and qualities of the constituents of the blood. The compound of proteine may form a first, second, or third, &c., product before it becomes nervous matter, and if a vegetable principle be introduced into the blood, it may supply the place of any one of these products, if its composition is properly adapted for it.

Another, and important fact is, that the vegetable alkaloids cannot be shown to be related, in composition, to any other constituent of the body, except the brain and nerves, all of which contain nitrogen, and in composition are intermediate between proteine and fat. The brain itself exhibits the character of an acid; those substances which act powerfully upon the nervous centres, morphia, strychnia, and other alkaloids, are arranged in point of activity in the inverse order of the proportions of oxygen they contain, evidently pointing out a striking fact as to the nature of their action. We have seen that ready-formed gelatine may be appropriated by the sick, and the system relieved of the task of preparing it from the blood; in a similar way, it may be supposed, a product of vegetable life may be employed by the organism for the same purpose as that formed by the vital energy.

By late analyses it has been found that the peculiar vegetable principles in coffee and tea, *caffeine* and *theine*, are identical in composition. It is remarkable also, that this substance, with the addition of oxygen and the elements of water, yield *taurine*, the nitrogenized principle of bile. The same is true of the principle of asparagus. If to the elements of *theobromine* the same constituents be added, we have the elements of taurine combined either with urea, carbonic acid and ammonia, or uric acid. It is in virtue of the nitrogen they contain that these substances assist in forming the azotized constituents of the bile. It cannot be denied that such aid may be required where there is a deficiency of motion, and, consequently, a deficiency of that change of tissue which would yield a nitrogenized product for the composition of the bile, and where, also, the non-nitrogenized food is in excess. In such cases, this principle in the food may supply the place of the product derived from the tissues, and consumed in the respiratory process.

Phenomena of Motion in the Animal Organism.—The consideration of motion in animals, constitutes the third part of our author's report. It is introduced by remarks on vitality, and a comparison of its phenomena with other natural phenomena, the laws governing which have been investigated. We have included in our analysis of the first part of this work, the principal facts and observations which introduce the subject of motion; we shall, therefore, omit all that may not be necessary for the explanation of Liebig's views on this subject. To aid us in forming a clear conception of the origin of the mechanical motions in the animal body, recourse may be had to the various wonderful effects of the galvanic battery. When the two kind of plates are brought in contact with an acid and united by a wire, a chemical action begins at the surface of the most oxidizable plate, and the wire acquires certain properties, overcomes resistance, and decomposes compounds, the elements of which have the strongest attraction for each other; yet this wire takes no part in these changes, it is merely the conductor of force. The manifestations of this force follow immediately upon the change in the chemical character of the acid, and the amount of force is in direct proportion to the number of particles of acid undergoing this change. Applying these facts to the investigation of motion in the animal body, we know that the heart and some other organs do not generate moving power in themselves, but receive it from other parts; we know that the nerves are the conductors of force and motion; that where nerves are not found motion does not occur. The excess of force in one organ is carried to other parts which cannot produce it. The motions of the animal

organism are dependent upon a certain change of form and structure in the living part, and the amount of this change stands in a close relation with the amount of force consumed in the motions. Immediately on the manifestation of mechanical force, a portion of the muscle acting, unites with oxygen, loses its vital properties and separates from the living parts. From this relation between change of matter and consumption of force Liebig infers "that the active or available vital force in certain living parts is the cause of the mechanical phenomena in the animal organism." The whole of this part of the report is devoted to the support of this proposition. It cannot be denied, whatever may be the theory, that for any amount of motion an equivalent of chemical force is manifested, that is an equivalent of oxygen enters into the substance of the organ which has lost its vitality. We see, too, that all parts destined for the production of force are traversed in all directions by minute vessels, in which arterial blood continually circulates, carrying a free supply of oxygen. That these are facts we cannot doubt, although we may well doubt whether the cause of the combination of the oxygen with the muscle is, that the nerves have conducted away that which resists the oxygen, the vital force. *Our author supposes that the nerves do this*, in their office of conductors. In accordance with this view, he finds the muscular system interwoven with nerves, while the gelatinous tissues, mucous membranes, tendons, &c. not destined to produce mechanical force, are destitute of them. These last mentioned substances have a composition which would readily allow of their combination with oxygen; one surface of the intestines and the cells of the lungs is constantly exposed to its action, and would undergo change, were it not that other more easily oxidizable substances are present and neutralize it. In this point of view we cannot fail to perceive the importance of the bile to the intestines and pulmonary cells, as well as of the fat, mucus, and secretions generally. The bile, it will be recollected, is afforded by metamorphosed muscular tissue; hence the greater the amount of force expended, the greater the amount of bile to protect these surfaces.

We cannot question that the blood is continually bathing the various parts with their nourishment, and that the living muscular tissue never loses its power of growth; but the force expended, and consequently, the waste of matter is continually varying; it is also obvious that an equilibrium between supply and waste can only occur when the lifeless portion removed is, at the same instant, supplied by a new portion. Growth takes place to about the same extent in equal times. Mechanical effects on the other hand vary greatly in amount during the same time. Now as we can hardly suppose that supply and waste occur at the same instant, there must be in every individual, unless the phenomena of motion are to cease entirely, a condition in which all voluntary motions are completely checked, in which there is no waste. This condition is *sleep*. The involuntary motions continue during sleep, but the amount of force required, and consequently of tissue which loses its life, is confined within narrow limits; but this force, whatever it may be, and that expended in voluntary motions, during the waking state, must be reaccumulated during sleep. In this state, voluntary motion ceasing, the animal approaches to the nature of a plant, in which all its vital energy is employed in growth and nutrition. The living part of a plant acquires, according to Liebig, its whole vital force from the absence of conductors of force. By this means the leaf is enabled to overcome the strongest chemical attractions. The same vital force which in the plant is

an almost unlimited capacity of growth, becomes in the animal body, a source of motion. A wonderful and wise economy has ordained, that what is appropriated as nourishment should have a composition identical with that of muscular tissue. If animals were obliged to decompose carbonic acid, the elements of which are held together with such force, much vital energy would be prevented from assuming the form of moving power. The change of blood into muscular fibre, may take place without loss of force, since it is a mere change of form from a fluid to a solid; all the constituents of the latter floating in the former.

"In what form, or in what manner, vital force produces mechanical effects in the animal body, is altogether unknown, and is as little to be ascertained by experiment, as the connection of chemical action with the phenomena of motion, which we can produce with the galvanic battery."

We see then that growth stands in a fixed relation to the amount of vital force consumed as a moving power; that the power available for mechanical forces is equal to the amount of vital force in the tissues which may undergo change, and that in a given time only a limited amount of force can be manifested. The amount of azotized food, necessary to restore the balance between waste and supply of matter, is in proportion to the tissues metamorphosed, and the last may be measured by the amount of nitrogen in the urine. Hence we learn that, in whatever way mechanical force has been employed, whether in voluntary or involuntary motions, it must be proportional to the amount of nitrogen in the urine. Health in the adult, must include the idea of equilibrium among all the causes of waste and supply, the absolute amount of which is different at different periods of life. In the child nutrition is active, and the supply exceeds the waste; but as the vital force cannot be employed at the same time in increasing the mass, and in producing mechanical effects, these last must be less than in the adult. In old age, on the other hand, as the mechanical effects have increased, growth ceases, and the whole mass even decreases. The available power is estimated by mechanics to be, in the adult, $\frac{1}{5}$ th the weight of his own body, moved during eight hours at the rate of five feet in two seconds. In regaining his original weight, a man regains a sum of force which enables him to repeat the next day the same amount of labour. In seven hours of sleep this amount of force is obtained, consequently we may assume that the mechanical power is in proportion to the number of hours of sleep. The adult man wakes 17 hours and sleeps 7; if the equilibrium is restored in 24 hours, the mechanical effects produced in the waking state, must be equal to the effects produced during 7 hours in the formation of new parts. An old man sleeps $3\frac{1}{2}$ hours, and all other things being equal, he will be able to produce half the mechanical effects of the adult of equal weight. The infant sleeps 20 hours and wakes only 4, hence the force consumed in forming new parts is to the force used in motion as 20 to 4. If we represent the available force of the adult man by 100, and consider this equal to the formative power, the same forces will be represented in the child by 24 and 286, in the old man by 118 and 43; the proportion of increase of mass to the waste, will be in the adult as 100 : 100, in the child as 100 : 9, and in the old man as 100 to 274. With every hour of sleep the sum of available force in the old man approaches the state of equilibrium between waste and supply, which exists in the adult.

The living animal body manifests these effects only at certain tempera-

tures. The abstraction of heat is equivalent to a diminution of vital energy. The cooling process is counteracted by the combination of oxygen with the metamorphosed tissues in the carnivora; in the herbivora a certain amount of heat is generated by those elements of their non-azotized food which can combine with the same gas. The food required by the same individual exposed to different temperatures is unequal, more being consumed in the lower than in the higher temperature, and as the original weight remains the same, it follows that the oxygen absorbed must also be greater in the lower. The amount of tissue metamorphosed being thus augmented, shows that a greater amount of vital force must be rendered available for mechanical purposes. With the external cooling, the respiratory motions become stronger, and more oxygen is conveyed to the blood; but in a given time an unlimited supply of oxygen cannot be introduced into the body, consequently it is only within certain limits that the diminished temperature increases the transformation of tissue. If the cooling go beyond a certain point the temperature of the body falls, the mechanical effects diminish, and a state of sleep ensues, in which all involuntary motions soon cease, and death takes place. In climbing high mountains, where the air is rarified, and less oxygen absorbed in an equal number of respirations, the amount of force available for moving the body diminishes. If any substance be introduced into the system, for which oxygen has a greater affinity than for the animal tissues, these last will be preserved and a limit put to the change of matter in certain parts of the body. Liebig supposes alcohol to supply the place of muscular fibre in combining with oxygen, and remarks that the development of heat in the body after its use, is not accompanied by a corresponding amount of mechanical force. That alcohol is consumed within the body, he infers from the fact that it has never been chemically detected either in the expired air, urine, or perspiration, although the weariness, feebleness of limb, and drowsiness, show that the mechanical force is diminished, still we cannot question that some of these symptoms must be attributed to the influence of alcohol on the nerves of voluntary motion.

In hibernating animals, during their winter sleep, there is no increase of mass; in some, apparent death occurs in consequence of the diminished vital energy; in others the involuntary motions continue, and preserve a temperature above that of the surrounding air. The respirations go on, and the oxygen unites with the fat, covering all those organs which would not otherwise be able to resist its decomposing influence, and which, like the intestines and membranes, are not destined for the change of matter. In this class of animals the active force of the living parts is devoted, during hibernation, to carrying on the involuntary motions; no expenditure taking place in voluntary motion. In animals which have been hunted to death, metamorphosis of all the living parts of its muscular system occurs, and its flesh becomes uneatable. All the available vital force is consumed in voluntary motion, leaving nothing for those that are involuntary, and a fatal syncope follows.

Theory of Respiration.—During the passage of the venous blood through the lungs, the globules change colour and absorb oxygen, and for each volume of oxygen absorbed, an equal volume of carbonic acid is given out. The red globules contain a compound of iron, and no other constituent of the body contains iron. It is to the part which iron plays in the respiratory process, that Liebig directs his attention. The globules

which have lost their oxygen by combining with the various tissues of the body, in their return towards the heart, combine with carbonic acid and produce venous blood; and when they reach the lungs an exchange takes place between this carbonic acid and the oxygen of the atmosphere. The iron in the arterial blood exists in the state of a peroxide, it passes to the capillaries, gives up a portion of its oxygen and becomes a protoxide, it then combines with carbonic acid and returns to the heart as a carbonate; in the lungs it is again exposed to atmospheric air, becomes again a peroxide and returns to the tissues. This hypothesis rests on well known observations, and Liebig proves by calculation that the amount of iron present in the blood is sufficient for transporting twice as much carbonic acid as can be formed by the oxygen absorbed in the lungs. This hypothesis explains the frightful effects of sulphuretted hydrogen and prussic acid, when inspired, by the well known action of these compounds on those of iron, when alkalies are present; and free alkali is never absent in the blood.

All the analytical evidence referred to in the body of the work, is collected in the appendix. It is copious and contains many valuable analyses, some of them undertaken expressly for this work. The analyses of food and of the constituents of the blood are especially full.

In conclusion, we would express our obligation to Professor Webster, for the opportunity he has given us, in his handsome and accurate American edition, of becoming acquainted with so valuable a contribution to chemistry and physiology.

BIBLIOGRAPHICAL NOTICES.

ART. XIII. *The History, Diagnosis, and Treatment of Typhoid and of Typhus Fever; with an Essay on the Diagnosis of Bilious Remittent and of Yellow Fever.* By ELISHA BARTLETT, M. D., Professor of the Theory and Practice of Medicine in Transylvania University. Philadelphia, Lea and Blanchard, 1842. pp. 395.

THE above work was written, as the author informs us, in view of a want in medical literature, which we agree with him it was important to supply. This want mainly arises from two sources. One is, to use the words of Dr. B., that our science, so far as the great subject of idiopathic fevers is concerned, is passing through a transition period; and hence many authorities, recently received as standard and classical, are fast becoming obsolete. Again, it is every day becoming more apparent to all, that the English writers on fever must be regarded as insufficient and unsafe guides to the American practitioner on the subject of fever, because the descriptions of the former are principally derived from the observation of a form of fever rarely met with amongst us. This difficulty is further increased by the fact that they have failed to discriminate sufficiently this form of continued fever from that which is most common in this country, and to which the term typhoid is now generally applied. To lay before the reader, then, a fuller and more discriminating history of the two principal forms of continued fever is the chief object of our author. His book aims, he tells us, at no other excellence and no higher merit, than those of being a methodical and compendious summary of the actual state of our knowledge upon two most common and most important diseases. This excellence, it seems to us, that it has attained in a high degree, for we have rarely met with a work which so faithfully satisfied the promises of the preface as that before us. The third and last part of the work consists of a short essay on the diagnosis of bilious remittent and yellow fevers.

Typhoid fever is first described. With this disease, our author has had opportunities of becoming practically familiar, his professional life hitherto having been passed in a portion of New England, where the disease has very constantly and at times very extensively prevailed. For this reason, and because it has been better studied, and, there is good reason to think, is more generally and extensively prevalent in various parts of the world than the other distinct forms of essential or idiopathic fever, the first place is assigned to it. That it is very generally prevalent in many parts of the world cannot be doubted, but whether in this respect as well as in the number of persons attacked it exceeds in importance malarious fevers, we very much question. Of the wide prevalence of the former, however, there is no question, and it is equally well understood that as it prevails with us it is entirely identical with that of Paris so ably described by Louis and Chomel. Its description by these gentlemen constitutes the basis of that before us, in which are incorporated the observations of Jackson, Hale and others in this country, together with the author's own experience. He has also made use of the admirable essay of Nathan Smith, written before the pathological characters and diagnosis of the disease had received their present degree of elucidation, upon the typhus fever of New England, of the identity of which with that now known as typhoid, there can be no question.

We shall not of course follow our author in his description, in which he has taken up each symptom, lesion, &c. in succession, after the example of Louis and others.

In reference to the contagiousness of the disease he expresses no opinion, as further and more various observations are necessary to settle the question. He lays before the reader the statements of the best authorities, particularly adducing that of Dr. Smith in this country, who, in common with Gendron and others in France, believe in its contagious character, and adduce in support of their opinion many instances of its introduction and spread in country villages in such manner as to render the influence of contagion highly probable. The facts stated by Dr. Smith are certainly very strong, and the immunity from a second attack, a point which now seems to be pretty well established, does certainly, as our author remarks, strongly corroborate the same view.

Speaking of the influence of locality, he says:—

"Typhoid fever is, evidently, a disease of very extensive geographical prevalence. We have not the means of ascertaining its limits, but there is good ground, I think, for believing, that these limits are wider than those which circumscribe the prevalence of any other strictly idiopathic, non-eruptive fever. It is the common fever of the Eastern States. It is questionable, indeed, whether this section of the country is the seat of any other fever, unless it be an occasional sporadic case, or epidemic, of an obscure and doubtful character. It prevails, also, more or less extensively, in the Middle and Western States. I have seen it in Kentucky, where it is sometimes called the *red tongue fever*. It is, probably, less common in those portions of the United States, which are visited by the various forms of intermittent and remittent fever than in those which are exempt from these diseases; although more extensive and accurate observations than have yet been made are necessary to settle this point. Now that the means for correct and positive diagnosis of the several distinct fevers of our country are becoming more and more generally diffused, there is reason to hope that this, as well as some other circumstances, in the natural history of typhoid fever, will soon be satisfactorily established.

"It would seem that the typhoid is the most common and generally diffused fever of the temperate latitudes of the continent of Europe. Certainly it is so of France, where it has been most extensively and thoroughly studied. It seems to be also the common fever of Germany. Louis saw it at Gibraltar in 1828. It occurs with considerable frequency in the British Islands, although it is not their most common form of fever."

We must leave future observations to show whether typhoid fever prevails more extensively than we are at present aware of, but so far as positive information at present reaches, it seems to us that malarious fevers, or those of a periodical type, must be considered as having the widest range. In our own country they are found along the whole Atlantic coast south of New York, throughout the whole southern and western states, and as far north as the shores of the great lakes. In Europe they prevail along the shores of the Mediterranean; in Spain, Italy, the south of France, Greece, Hungary, and as far north as the shores of the Baltic, and in England, to say nothing of their prevalence in other quarters of the globe, in the West Indies, in Africa and the East. Still it is true that it may hereafter be shown that typhoid fever is more universally prevalent. All we mean to say is, that at present we are scarcely justifiable in assuming this to be true or even probable, for to our minds the probabilities rather incline to the opposite side. Of the connection of the disease with circumscribed localities, several very remarkable instances are given, which occurred in New England.

In the chapter on diagnosis, after giving a general portraiture of the disease, and noticing various affections with which it may be confounded, he goes on to consider how far the lesion of the elliptical plates is strictly characteristic, and consequently how far its presence or absence may be regarded as final and decisive in reference to the diagnosis of fatal cases. He considers, *seriatim*, several apparent exceptions to this rule, which have been reported, especially the cases of Andral, none of which can be shown to be cases of typhoid fever, and most of them clearly were not so. Indeed most of the exceptions which have been

advanced clearly depend upon errors of diagnosis, and upon a want of distinction between the typhoid state and typhoid fever.

"It is certainly very important, that this *typhoidal* state of the system, occurring in connection with many diseases, should be distinguished from typhoid fever. Unless this is done there is an end to all positive and philosophical diagnosis. Since writing this history, I have seen a patient presenting these phenomena, amongst others:—prostration of strength; slight *subsultus tendinum*; tympanites; distention of the abdomen; diarrhoea; gurgling on pressure; a dry, red, cracked tongue; sordes on the teeth; wandering delirium, and sudamina about the neck. Here were many of the most characteristic elements of typhoid fever; but the disease was, clearly and unequivocally, puerperal peritonitis. These *typhoid phenomena*, as I have already said, are often present in many diseases; in smallpox; in scarlatina; in asthenic pneumonia; in softening of the brain; in some diseases of the kidneys; in erysipelas; in dysentery, and so on; but under these circumstances, where their connection with these several affections can be discovered, they ought not to be confounded with typhoid fever. It was from disregarding this obvious principle, that Andral was led to the conclusion which I have been examining."

Still some obscure and apparently exceptional cases are from time to time though very rarely met with, and our author concludes by observing—

"In the consideration of this question, as of all others, which are still legitimate subjects of discussion and controversy, I have sedulously endeavoured to avoid any thing like a partisan, or one-sided examination. I have not intentionally overlooked, or put aside, or warped to my mere wishes, if I have any such unfriendly and treacherous guides and counsellors in the search for truth, any of the evidence bearing upon the subject. I have adduced all the cases, that I have been able to find, which might seem to constitute exceptions to this general relationship, or to throw doubts upon its invariableness; and the conclusion to which I am irresistibly led is this; that the connection between the diagnostic symptomatology of typhoid fever, and the entero-mesenteric lesions, is, I will not say absolute and invariable, but as nearly so as the connection between the diagnostic symptoms, and the characteristic lesions of any given disease, whatever, in the nosology, in which this connection is not established by positive, physical signs."

In the chapter upon the theory of the disease, after observing that our knowledge of the causes of any given fever, their mode of action, the point upon which they make their first impression, the character of that impression, &c., are wholly or in great measure unknown to us, and consequently that the materials for a complete and philosophical theory of fever are wanting, he goes on to remark that there is no reason why we may not attempt to commence the foundation of a theory of fever, which cannot, however, be carried beyond the interpretation of the connection and relationship which observation has shown to exist between certain phenomena or groups of phenomena.

"It ought to be unnecessary to say, that even this can be done only by confining ourselves to a single well defined, individual form of fever. Under the simplest conditions, and where alone it is, in the nature of things, at all possible, we shall find this interpretation, or theory, sufficiently obscure and difficult. When attempted, as has generally been the case, under other conditions, it has proved utterly futile; when applied, as these interpretations and theories have generally been applied, to unascertained and imaginary states of the system, they have always degenerated, necessarily, into the idlest of all conceivable speculations. There is no such disease as that which has always been expressed, and which is still expressed by the term *fever*. How then can there be any *theory* of fever? There are many separate diseases, to which this generic name is properly enough applied, on account of certain general analogies, which exist between them. But the disordered actions and processes, which constitute one of these diseases, may differ essentially; and, as far as we can ascertain, in most cases they do so differ, from those which constitute another of these diseases. The theory of one fever, then, must be wholly, or to a great extent, inapplicable

to another. The elements which enter into the composition of one problem are not to be found in the other, or they are present in different proportions. The word *fever*, when used, as it commonly is, to designate a disease, has no intelligible signification. It is wholly a creature of the fancy; the offspring of a false generalization and of a spurious philosophy. What, then, can its *theory* be, but the shadow of a shade?"

The above remarks strike us as exceedingly just, and were the views which they illustrate more generally appreciated, we should find much less confusion on this subject than is usually to be met with in medical writings. We should no longer hear of one fever passing into another of distinct nature, any more than we hear of a case of smallpox passing into scarlet fever, or the like. In reference to the disease before us, our author attempts nothing more than to show that it does not depend upon the lesion of Peyer's glands, and consequently that it cannot be regarded as a follicular enteritis, but must be viewed as dependent upon some ulterior morbid condition, of which the lesion above mentioned is one of the consequences. The arguments in favour of this view are very clearly and forcibly stated, especial stress being laid in this connection upon the analogy between the lesion of Peyer's glands and the disseminated inflammation which characterises the eruptive fevers, syphilis, &c. As regards the ulterior morbid condition above alluded to, which constitutes the essence of the disease, different opinions are held. By some it is supposed to consist of an unascertained lesion of innervation, and by others, of an almost equally unknown alteration of the blood. Both these views are clearly hypothetical, though we agree with Dr. B. in thinking that the latter is the most probable of the two.

Under the head of treatment, he lays before the reader the plans of practice adopted by the most prominent living authorities, as well as that of Dr. Nathan Smith, of New England. The essay of this gentleman on the disease before us, is altogether a very remarkable one, when we consider the period and circumstances under which it was written. His conclusions upon many points are strikingly in accordance with those arrived at by more recent writers. After describing the different plans of practice above alluded to, our author observes, and very justly, that amidst the claims of conflicting opinions, we are not now justified in the use of any ultra or exclusive system of treatment, like that of Bouillaud or De Larroque, but that our management of the disease should be eclectic and rational. The prominent features of this rational method consist of moderate depletion and other antiphlogistic measures at the outset, followed by the use of diluent drinks, mild diaphoretics and laxatives, cool enemata, cool sponging when the skin is hot, &c. during the course of the disease, together with the adoption of such measures as experience has shown to be most useful in combating particular symptoms. If we add to these the old fashioned prescription of minute portions of calomel, ipecac. and opium during the middle and latter periods when the fever still exists, with dry tongue, and other evidences of deficient secretion, and from the use of which we have often seen the most decided benefit under these circumstances, we have a fair outline of the plan of practice usually adopted in the hospitals of this city. The exclusive and sanguinary system of Bouillaud, the absurdity of which is only equalled by the offensiveness of its author, is dismissed with the brief condemnation which it deserves. The exclusive treatment of De Larroque, consisting of an emetic, followed by the almost indiscriminate use of cathartics up to the time of convalescence, seems to gain but few advocates out of Paris.

The second part of the work before us is devoted to typhus fever. This disease would appear to be the common fever of Ireland, and also to prevail extensively in England. In our own country it can hardly be said to exist. Whether the spotted fever which prevailed in New England, as well as farther south, in the early part of the present century, was really typhus, it is difficult to determine. Under ordinary circumstances, however, it is quite certain that this disease presents itself to our notice chiefly in the persons of emigrants, mostly from Ireland, or in individuals likely to have had intercourse with such emigrants. Even the epidemic of 1836 in this city, described by Dr. Gerhard, was very

limited in extent, and in a great measure confined to the lowest class, the great majority of the patients admitted into the alms-house hospital and seen by him, having been brought from a very circumscribed district, the St. Giles of Philadelphia, inhabited by the most degraded portion of the population. Still, its study should be one of great interest to medical men generally, for if it really is, as now seems most probable, a totally distinct disease from typhoid fever, it becomes highly important that the question should be generally understood and settled upon the most positive grounds. To lay before the reader the evidence upon this point, is one of the leading objects of the work before us, and one too which has been ably accomplished. Under this head we shall have an opportunity of noticing the most prominent features of the disease, and as in the case of typhoid fever, we shall not follow our author in his detailed description of the symptoms and post mortem appearances. In the chapter upon the causes of the disease, we are presented with a number of facts going to show the influence of age, sex, locality, &c. upon its prevalence. Its geographical boundaries, as a common and more or less constant disease, are, as Dr. B. observes, much less extensive than those of typhoid fever. In this sense, as before observed, it can hardly be said to exist in the United States; and on the continent of Europe, it would seem that it prevails, not uniformly as in Great Britain, but only as an occasional epidemic. In France, for a number of years, it has been almost unknown.

The contagious nature of this affection has generally been held by the best writers, and recent observations entirely confirm the correctness of this opinion. Many interesting facts bearing upon this question, derived principally from modern British authorities, are brought forward by our author, who arrives at the following conclusion:

“From a pretty careful, and certainly an unprejudiced, examination of this subject, in the observations and opinions of British writers, I think we may look upon it as well settled, that the morbid actions constituting typhus fever are capable of generating in the body a poison, which, when concentrated, and aided in its operation by favouring circumstances, will produce the same disease in persons exposed to its influence. We may consider it, also, as not less certain, that the same poison may be generated by other agencies; amongst the most active of which seem to be the crowding together in close, unventilated apartments, amidst accumulated personal filth, of the wretched and suffering poor.”

It will be observed that our author is no advocate for the exclusively contagious origin of the disease, but on the contrary, that he fully admits that it may originate from other sources. Epidemic influence, impoverished diet, and other causes, are undoubtedly often intimately connected with the prevalence of the disease.

The influence of age upon the mortality of the disease is very striking, it being much milder in the young, than in those more advanced in life.

We come now to the diagnosis of the affection, and especially to the distinction between it and typhoid fever. The question of the identity or non-identity of these two affections is nothing new. Similar controversies to that now occupying the attention of medical men are to be found among the older writers, by some of whom the distinction between certain forms of fever, described under different names, but identical in the main with what we now know as typhoid and typhus, was more or less fully recognised. Thus Huxham in an extract which our author has placed at the head of the chapter upon this subject, speaks of the great difference between the putrid malignant and the slow nervous fever, and the errors in practice which arose from a want of this distinction. After, however, the general history, and especially the morbid anatomy of typhoid fever, were so clearly made out and established by Louis, it became a matter of great interest to determine whether that form of typhus, epidemics of which had been described under the names of petechial, of jail fever, &c., presented the same morbid appearances, for the determination of this point was clearly one which must have great influence in settling the question of identity. That a large proportion of the cases of typhus in England and Ireland, do not present the intestinal lesions of typhoid fever, is now admitted by all, but it is still a

question whether these lesions characterize a distinct disease, or are only to be regarded as a complication belonging to certain cases of typhus. Were this idea correct, it seems to us that we should find in these cases, the symptoms of true typhus with the addition of those which belong to the intestinal affection. This, however, is not true. On the contrary we find in the cases characterized by intestinal lesion, not merely the superaddition of abdominal symptoms, but other points of difference of the greatest importance. Thus in typhoid fever the eruption is very different from what is met with in typhus, that of the former consisting of a few rose-coloured elevated spots, mostly confined to the chest and abdomen, whilst in typhus it is abundant and general, of a dusky colour, not elevated, and but partially or not at all disappearing under pressure. The odour of the body is said to be different in the two diseases, and the heat in typhus is more pungent. The difference in the expression of the countenance is so marked that it is of itself sufficient in many cases to enable the experienced physician to distinguish between them. The average duration of typhus, also, is considerably less than of typhoid fever. The former is more common in persons of advanced life than the latter, and finally the influence of remedies is very different in the two diseases. Having pointed out the distinguishing features, our author observes:

"If this alleged and well-defined difference between typhoid and typhus fevers really exists; if these two diseases are radically and fundamentally diverse, and unlike each other; and if the diagnosis between them can be generally established, it becomes a matter, not only of scientific interest, but of great practical moment; for us to inquire how far this distinction is recognised, either in form or in fact, by the leading and classical British writers, who have long been and who still continue to be, to a very great extent, at any rate, our guides and authority on the subject of one at least of these diseases. What do they mean by the terms typhus fever, common continued fever, slow nervous fever, and so on? Do they describe a single disease, essentially indetical in its nature, and differing only in its form, under these several appellations? If so, what is this disease? Is it typhus fever, or is it typhoid fever? On the other hand, do they describe distinct and separate diseases, under these several appellations? If so, what are these diseases? Are they typhoid and typhus fevers, or are they something else? Certainly, I need not say how necessary it is to all sound science and to all successful or even safe practice, that we should understand each other upon this primary and fundamental point of diagnosis. Certainly, I need not say what contradictions and what inextricable confusion must inevitably grow out of the want of this understanding. In order to determine, as far as may be, the questions above indicated, I will briefly examine the opinions and observations of some of those British authors, whose works are most generally in the hands of our own practitioners, and whose writings have most extensively influenced their doctrines and their practice. Amongst these, I may mention, particularly, John Armstrong, Southwood Smith, and Alexander Tweedie."

After an examination of the statements of the writers just mentioned, as well as a careful analysis of the investigations which have been made in reference to the same question during the last few years, our author arrives at the following conclusion, with which in the main, we entirely coincide.

"Such is the history, as full and fair as I have been able to make it, of the recent investigations in regard to the relations between typhoid and typhus fevers. Excepting those of M. Landouzy, it seems to me, that they all go to show, that the two diseases are radically and essentially dissimilar. I have no wish, whatever, to *make out a case* in this matter. I would avoid, scrupulously, anything like special pleading. The truth, as Louis's motto from Rousseau says, is in the things, in the facts and their relations, not in my mind, which attempts to judge and to interpret them. I am anxious, only, that this truth, be it what it may, should be ascertained. That this has been done absolutely and definitively, I do not pretend. That typhoid and typhus fevers are, clearly and unequivocally, fundamentally distinct diseases, may not have been positively demonstrated. I admit, that the paper of M. Landouzy throws some doubt upon

the question. But, as has been remarked before, whether the two diseases be or be not specifically and nosologically unlike each other, it is equally important, that the wide differences which confessedly do exist between them should be pointed out, and their real relations established. This I have endeavoured, so far as the present state of our knowledge could enable me, faithfully and truly to do.

“In regard to the identity of the former camp and jail fevers of the European continent, either with typhoid fever, or with typhus, it is not possible to come to a positive conclusion. Louis thinks, that they were typhoid; others think, that they were typhus. It is probable enough, that both forms of fever may have prevailed. At any rate, the descriptions given of them are generally so imperfect, that it is wholly impossible now to decide this question with any degree of certainty. It is quite as well, perhaps, not to attempt its solution at all.”

As regards the former camp and jail fevers of the European continent, it does seem to us highly probable, that some of them at least were examples of true typhus. Such, for instance, we should consider the disease described by Pringle, and the petechial fever of Italy, an account of which has been given by Rasori.

The paper of M. Landouzy, mentioned in the extract given above, appeared during the present year, and contains a history of an epidemic which appeared in the prison at Rheims, in which most of the symptoms were strikingly similar to typhus, whilst the post mortem appearances in part resembled those of typhoid fever. The elliptical plates were either thickened and elevated, or they were the seats of ulcerations; and the mesenteric glands, corresponding to them, were enlarged. The spleen was not increased in size in any of the cases; in four it seemed somewhat softened. Such a combination of symptoms and post mortem appearances have been noticed, we believe, by no previous writer; and they are certainly calculated to make us pause and await the results of future observation in reference to the question of the identity of these several forms of fever. “If,” as M. Landouzy observes, (we take our author’s translation as quoted by him,) “in all future epidemics of the typhus of camps, of jails, of hospitals, &c., we find, as in that of Rheims, complete absence of disease of the spleen, and great differences between the symptoms and those of typhoid fever, we must confine ourselves to the conclusion, that typhus and typhoid fever are analogous, and not identical diseases. If, on the contrary, we find, that in one epidemic, diarrhoea is absent, in another the petechial eruption, in another the rose spots, and so on, we must conclude, that these differences depend only upon variations in the action of the epidemic cause, and that the disease is, in its nature and essence, identical with typhoid fever.”

We have now completed a very cursory notice of our author’s account of these two fevers. He has succeeded in presenting to the reader a very full summary of what is known in reference to them, couched in clear and concise language, and unincumbered by loose disquisitions or fanciful speculations. He has shown great skill in the collation of his materials, and a truly philosophical spirit in the cautious and logical inductions which he has made. His work is one which amply supplies, as he intended it should, an undoubted deficiency in medical literature, at least in this country, and should be read by every physician who wishes to have precise views on the subject of which it treats. The volume closes with a short account of the diagnosis of bilious remittent, and yellow fevers, which we shall not examine in detail, especially as many of the views maintained in it, have been already sustained in this Journal by the writer of these remarks.

T. S.

ART. XIV.—*Elements of Physiology*. By J. MÜLLER, M. D., Professor of Anatomy and Physiology in the University of Berlin, etc. Translated from the German, by WM. BALY, M. D., etc. Arranged from the Second London Edition, by JOHN BELL, M. D., etc. 8vo. pp. 836. Philadelphia, Lea & Blanchard, 1843.

IN a review of the greater portion of Professor Müller's *Elements of Physiology*, published in this Journal upwards of two years since, we took occasion to express our high estimate of the work, as affording a very full, able, and correct digest of the present state of physiology; in which the well established facts connected with the science are carefully distinguished from whatever is doubtful or purely hypothetical, and presented with that degree of distinctness and prominence, which is well calculated to convey to the reader clear and accurate views in relation to all that is known of the vital phenomena of the human organism.

The work before us is, strictly speaking, an abridgement of the larger work of Professor Müller from the English translation of Dr. Baly, in the execution of which, the editor, Dr. Bell, has exhibited no little skill and judgment.

We confess, that we have invariably entertained decided objections to all abridgements, but especially to those of scientific works, as being, in most cases, calculated to present imperfect, unfair, and even erroneous views of the labours of authors, and in this manner to mislead and bewilder the reader—we must nevertheless admit, after a tolerably minute and careful examination of Dr. Bell's abridged edition of Müller's *Elements*, we find that to it our objections to abridgements in general will scarcely apply—in truth, so well has the able editor accomplished his task, that, in many respects, but especially for the use of students, the abridgement is decidedly to be preferred to the original.

The omissions in the abridged edition, are of a character in no degree calculated to render it a less complete system of physiology than the larger work—it still “exceeding in copiousness and comprehensive details, any other work on the same subject,” within the reach of the great body of the profession in this country.

The portions of the original work omitted in the abridgement, consist, to use the language of Dr. Bell, the accuracy of which we have tested by examination, “for the most part, of mere disquisitions, many details of experiments, matters of physics and natural philosophy, including mechanics under the head of locomotion, acoustics and the theories of music, under voice and hearing, and of optics under vision—much of the minutiae of comparative anatomy, and metaphysics or metaphysico-physiology. But, while excluding details on collateral topics, the editor has been particularly careful to preserve physiology proper, which, resting on the basis of histogeny and general anatomy, derives important aid from organic chemistry and microscopical observations, and, in its turn, serves to illustrate hygiene, pathology and therapeutics.”

“In some parts of the ‘*Elements*,’ comparatively little abbreviation has been attempted;—as in the prolegomena of general physiology, which is a carefully condensed summary of the subjects embraced under the general head, and does not admit, without obscurity, of any material curtailment. So likewise, in the case of the functions of organic life, those of assimilation, nutrition and decomposition, much of the copiousness of facts and illustrations which constitutes so distinguishing a merit in the larger work, has been retained in the abridgement.”

Some slight, but upon the whole, judicious changes in the arrangement of the subjects, have been made in the present edition; and a few notes at the foot, and some paragraphs in the body of the page, have been added by the Editor, embracing matter of a useful, and, in one or two instances, highly important character.

"With the exceptions just stated," Dr. Bell remarks, and we freely admit the correctness of his statement—"not only his manner of treating the various subjects, but the language of the author, has been preserved throughout, and hence, when it shall be discovered, as it readily may, by a comparison of the contents and index with those of the London edition, that there is scarcely a fact or proposition in human physiology, and none of either applied to hygiene, pathology or therapeutics, in the original work, as translated by Dr. Baly, that is not met with in the present volume, it will not be considered too much to say, that this latter contains emphatically Müller's 'Elements of Physiology,' with nearly the characteristics which give it value in the eyes of the student. So earnest has been the desire of the editor to complete in a suitable manner his arrangement of the work, that he has retained nearly all the bibliography, which manifests the extensive reading and research, as well as love of accuracy of the author. Not only did this measure seem to be due to Müller himself, but also to his readers in this country, the latter of whom will have it in their power, when quoting Müller, to repeat his references to all the authors on every leading question in physiology, and to carry out, if they desire it, an independent course of inquiry for themselves."

We should have been still more pleased with the present edition of the Elements of Müller, had the additions to and annotations upon the original text, by the translator, Dr. Baly, been, throughout, as distinctly marked as in the London edition. It is important, in many points of view, that the reader should always be aware of the facts and opinions which are to be referred to the authority of the author himself, and those which have been added by successive editors;—unless the means are afforded him for making this distinction, injustice may be unintentionally done to all the parties concerned—author, editor and reader.

Taken as a whole, we may remark in conclusion, that the present edition of Dr. Müller's "Elements of Physiology," as condensed and arranged by Dr. Bell, can, with great propriety, be recommended to the notice of all who desire to become acquainted with the vital phenomena and laws of the living organism, so far as they have been revealed to us by cautious observations and experiments. In no work can these be studied with greater profit than in that of the Berlin Professor—all the important materials of which, as well as all "its vitality and mind," have been carefully retained in the abridgement before us. D. F. C.

ART. XV.—*Quarterly Summary of the Transactions of the College of Physicians of Philadelphia.* August, September, and October, 1842.

THE principal papers read before the College the past quarter were, the history of a case in which an aneurismal sac was formed within the cranium, by Professor Dudley, of Lexington; a case of biliary calculi, by Dr. W. S. Zantzing; on the construction of Insane Hospitals, by Dr. B. H. Coates; and the result of personal observations and investigations during the last five years, on the subject of Mesmerism, by Dr. J. K. Mitchell.

Dr. Dudley successfully treated his case of aneurism within the cranium by tying the common carotid artery. The following are the details of this case:—

"J. C. Burgess came to Lexington in the winter of 1841, and gave the following history of his case:—As early as 1836, he had become subject, at irregular periods, to pain over the right eye, which gradually increased, both in the frequency of its recurrence, and in the attendant suffering; and before the expiration of the second year, the eye was considerably protruded from the socket. In 1839, the right temple, as well as the eye of that side, was morbidly prominent, and about this time the pain became so excruciating, as to occasion delirium, one attack of which was protracted to fifteen days. Occasional severe pain was at this period of the case experienced also in the left side of the face and temple.

"During the winter of 1838-9, for a number of weeks, his suffering was incessant, but was finally much lessened after a copious spontaneous discharge, from

the nostrils, of a yellow fluid. Increased suffering, ever after, succeeded to any interruption of this nasal discharge; and for some months previous, as well as subsequent to his arrival in Lexington, he was often alarmed at what he feared might result from nasal hemorrhage, and consequent death. He represented his right eye as entirely useless in regard to all distant objects, and in his right ear he was perfectly deaf. Various remedies had been advised by different physicians, and much speculation indulged upon the nature and the cure of the malady. To the examiner, the first object that attracted attention, was the enlarged and protruded eye, which was something like half an inch in advance of the other. The inferior and external portion of the *os frontis*, including the orbital and the external half of the superciliary ridge, were deeply involved in the malady; and in conjunction with corresponding portions of the parietal, temporal, and sphenoid bones, separated from the bodies of these bones, were involved in one common enlargement of that side of the head and temple. The bones of the head and face were separated at the external angle of the eye, sufficiently to admit the end of the little finger into the site of the transverse suture. The whole of the enlarged mass communicated the thrill to the touch which is characteristic of aneurism, while a lateral view of the eye-ball presented an alternate protrusion and recession of this organ, corresponding to the action of the heart and arteries.

"The treatment preparatory to a successful operation, which consisted in the use of plainly dressed, easily digested food, in moderate quantities, with the use of such evacuants as were necessary to place the alimentary canal and the organs tributary to digestion, in a favourable state, having been instituted, much of the suffering of the patient was allayed, and in the month of January he was brought before the medical class, when a ligature was applied to the common carotid artery. The effect of the ligature upon the artery was immediately sensible in the eye, and all that side of the head and face. The eye gave no more evidence of pulsation, the circulation in the integuments immediately became very languid, the tenseness of the whole of the parts involved in the enlargement was greatly lessened; while the patient expressed himself as being suddenly relieved of all noise and motion in the head. For two days no unpleasant symptom supervened; then a distressing cough came on, attended by the sensation of a foreign body in the windpipe, opposite to the wound, which deprived the patient of much rest for several days. On two or three occasions, during the progress of his recovery, he was attacked with severe pain in the head, attended with some fever; thus exciting an apprehension at first, that the aneurism in the brain might be progressive, by reason of the free communication between the different arteries of that organ. The use of small nauseating and purgative doses of calomel and ipecac., by which means fever was checked, and bile copiously discharged, exemplified the presence of that law, so well understood by ancient, as well as modern authors, which connects the cerebral and hepatic functions in disease.

"The rapid subsidence of the tumid state of all the parts involved in the disease by the end of the first week from the operation, rendered manifest the changes they had undergone. Isolated spiculæ of bone could then be distinctly traced, beginning about the centre of the superciliary ridge, and invading portions of the parietal and temporal bones; while the little finger could be passed into a vacuity, at the outer angle of the eye, corresponding to the transverse suture. By the end of the twentieth day from the operation, the line of separation between the bones had become obscure; the spiculæ were indistinct, while the whole enlargement was rapidly on the decline. The eye, now restored almost to its natural position in the socket, had recovered its usefulness for distant objects of vision; and the ear, which had been deaf, was now as acutely sensible to sound as the other. Before the end of the month, the patient being free of all disease, left Lexington for St. Louis, the place of his residence.

"He continued well for some time after his arrival at home; but upon throwing off all restraint in diet, drink, and exercise, his health suffered greatly, and made it necessary for him to apply to his family physician, Dr. Hall, through whose skill he was relieved. He is now, six months since the operation, in the

enjoyment of good health, and engaged in the labours of a blacksmith. My associate, Prof. Bush, saw a case in one of the Parisian hospitals, somewhat like the preceding, and for which nothing was proposed to be done by the surgeon in attendance. In the cases referred to in a late volume of the London Medico-Chirurgical Transactions, the aneurism appears to have been located on the branches of the external carotid, and to have been excluded from the cavity of the cranium; whereas, in the case now detailed, the only doubt which remains, is as to the *extent* of the aneurismal sac *within* the cranium, with the consequent loss of cerebrum by absorption.

"The great loss of cranium by absorption, the general enlargement of the forehead and temple, the preternatural development and projected state of the right eye, and the loss of hearing in the right ear, added to the long-continued suffering of the patient, admits of the inference, that the right hemisphere of the cerebrum may have been as extensively absorbed, in consequence of the pressure of the aneurismal sac, as in other cases it is known to be, from the presence of serum in the ventricles."

The following deductions are drawn by Dr. Mitchell from the various facts detailed by him in his communication:

"1. The investigations into the claims of mesmerism have been hitherto imperfect, because they have been conducted either by interested partisans, or prejudiced opponents.

"2. All previous examinations of this difficult subject have been directed rather to its undue pretensions, than to its less obtrusive foundations.

"3. The researches of the committees detailed by learned societies, have been contradictory and unfruitful, chiefly, because the trained subjects of the mesmerizers were examined, instead of those among their own friends and acquaintances, on whom they could rely for the unsophisticated representation of the natural phenomena of mesmerism. They invited deception, and either implicitly confided in it, or, having detected the attempt to mislead, condemned the whole system as one of fraud and imposture. Hence, they were always in those extremes which border on truth, but are never within its confines. Astronomy is not the less true, because the ignorant believe that the stars are holes through which the light of Heaven breaks, or because astrologers pretend to see the fates of humanity registered in the conjunction and disseverance of the planets.

"4. Imagination and imitation cannot account for the uniformity of the phenomena of the mesmeric state, in persons of all ages and conditions, who are totally ignorant, not only of the symptoms to be produced, but of the design of the mesmerizer.

"5. Neither will they explain the analogies found to exist between natural and artificial somnambulism.

"6. Nor can we, by any rational view of their cases, ascribe to any thing but a physical influence, the effect of *passes* on the diseased condition of certain patients, some of whom did not observe the manipulation, and none of whom understood its import.

"7. Admitting that the mesmeric sleep may be and is produced solely by mental means, the method as well as the phenomena of restoration, both in natural and artificial somnambulism, forbid us to believe that the patients are usually conscious either of the act or the intention. Many of them showed plainly their ignorance by their conversation at the time, and others were totally incapacitated for observation.

"8. If we admit the awakening without the aid of the patient's mental co-operation, we can find no reasonable difficulty in believing that the mesmeric sleep is producible also without that co-operation.

"9. The phenomena of artificial somnambulism are,—1. An exaltation of the circulation, without a corresponding increase of the respiration. 2. An obtunded sensibility to causes of pain, and sometimes, though rarely, its total obliteration. 3. The more or less complete obliviousness of the thoughts and events of the mesmeric state, while awake, although the memory of the events of the natural state is strong in the artificial state. 4. The retention of loco-

tion and the facility of being led into suggested dreams, are also curious effects of the mesmeric action. Nothing is too high for the daring, or too absurd for the belief of the dreamer. But all the mesmerized patients are not susceptible of this influence. A few subjects resist, even when asleep, all attempts to mislead them, although they present most of the other peculiarities of somnambulism.

"10. To this property of artificial dreaming may be referred the alleged miracles of *clairvoyance*, intuition, and prevision. The subject dreams that he sees, and the questioner is deceived, by his confidence, his plausibility, and his ordinary character. He knows him to be honest, and he does not perceive that he is himself led astray by his uncorrected imagination. There is all the effect of a fraud, without intention to mislead, and without blame.

"11. The mesmeric effect is usually producible within ten minutes, and at the first sitting, but some persons have yielded only after long and repeated trials. In general, unless very marked effects are exhibited within half an hour, all subsequent attempts to mesmerize are fruitless.

"12. The mesmeric sleep may be dissolved by time alone, the natural duration of the paroxysm lasting from thirty minutes to nearly five hours. The fear of not escaping from the spell, in the event of the death, or absence, or loss of power of the magnetizer, is therefore not well founded.

"13. The artificial solution of the mesmeric sleep requires sometimes only a single wave of the hand, sometimes many. The mean time is about two minutes.

"14. Independently of the voluntary aid of the mesmerized subject, the time taken to dissolve the sleep is very sensibly affected by the distance from him. Thus, in contact, a case consumed 4' 4"; at two yards, 7' 30"; at four yards, 16' 45".

"15. Sex does not appear to exercise any very marked influence on the mesmeric susceptibility.

"16. Age is a more modifying cause than sex. Though no age is exempted, the very young and old seem least susceptible; and the period of life between 12 and 20 is that most favourable to the mesmeric influence.

"17. Of the temperaments, the nervo-sanguineous seems most liable to the mesmeric action.

"18. Although without an exception, so far as I can discover, mesmerists agree in believing that a sound state of health is unfavourable to the success of their operations, I have found it most conducive to well marked mesmeric results. Of twenty-six somnambulists, nineteen were in good, and seven in bad health.

"19. The mesmerizing power seems to be very generally possessed, but the susceptibility to soporose mesmeric impression is confined to a few individuals, being about one in seven or eight of those subjected to the trial.

"20. The *rappport*, *relation*, or *communication*, supposed to have an absolute existence, dependent on the mesmeric fluid, seems to be entirely voluntary on the part of the patient, and to rest on his knowledge of its supposed necessity. It is, therefore, a delusion, but one of the greatest convenience to the public exhibitors of mesmeric wonders.

"21. The delusion as to the '*rappport*' is one of the many hallucinations of the mesmeric state, for which the subject of it is no more answerable than for any of the wild and monstrous dreams to which the disordered fancy may be led, in that unnatural condition both of mind and body. This truth is clearly proved by analogical cases of insanity, where similar delusions continue for years.

"22. The mesmeric state curiously modifies the condition of the senses. Sight, hearing, and touch, are usually improved; taste, smell, and sense of pain, as commonly impaired.

"23. As the sense of touch and of pain are so diversely affected by mesmerism, we are led to regard them as independent senses; probably, therefore, supplied by separate nervous fibres. Such an inference ought to have been made before, for many organs have the sense of pain, but not the sense of touch. The

presence of a poison will give pain to the stomach or intestines, which do not perceive the motions of the worms that infest them. If this view be correct, the sense of pain is a sixth sense.

"24. Many of the feats of the *clairvoyants* are the result of the sharpened hearing, which enables them to detect objects by the sounds they make. They really believe they see them, and so does the exhibitor, although he aids them by handling audibly the various objects. Thus he opens and shuts a pencil, a penknife, or a spectacle-case, and rubs a stick, or a sheet of pasteboard. He always makes as much noise as possible with every thing, and he generally asks the producer of a marked card to explain the words or device to him.

"25. As we cannot believe in mesmeric '*rapport*,' so we are not able to credit the existence of any peculiar sympathy between the operator and subject. Untrained or ignorant patients never show sympathetic phenomena. I have been pinched, and hurt otherwise, a great many times, without observing any suffering on the part of my subjects, until they were taught to believe that such a relation existed; and then they very honestly felt hurt, as people do in dreams—a kind of imaginary suffering.

"26. The phrenological phenomena of mesmerism, when rigidly examined, are found to consist, as do most of the mesmeric wonders, of '*such stuff as dreams are made of*.' The *excitement of the brain is general*, the *direction of that excitement is given by the mesmerized person's knowledge of phrenology*; but the patient is not in any case aware of his mental co-operation. This singular delusion or mis-apprehension, runs through nearly the entire subject of mesmerism; most of the phenomena of which are a strange mixture of physical impulse and mental hallucination. Phrenologists alone feel the phreno-mesmeric excitement. Persons partially acquainted with phrenology, experience it only as to the organs known to them; while those who are totally ignorant of the subject, present no local manifestations, until they are taught, either awake or asleep, what they should know, and what they should do. The displacement of old organs, in one city, their retention of location in another, and the adherence of the patients to the peculiar and dissimilar systems of phrenology, which they have, respectively, been taught, show clearly, that the direction of the cerebral excitement is personal and arbitrary; while the new maps of the cranium, so widely different from each other, leave us no longer in the least doubt as to the delusive source of the compound science of phreno-mesmerism.

"27. The mesmeric influence is the effect of what the natural philosophers call *induction*. The will of the operator acts solely on himself; his altered system re-acts on the subject of the experiment, by an unexplained power, analogous to the equally inexplicable *induction* of the mechanicians, and the *presence* of the chemists.

"28. Mesmerism may be sometimes usefully employed to allay nervous irritation, procure sleep, and obtund nervous sensibility, during surgical operations; but from the fewness of susceptible persons, it can be used very seldom for such purposes. In all other cases it appears to be of little use; and so far as I know, has never cured any serious disease. On the other hand, it sometimes, especially in unpractised hands, produces frightful disorders both of mind and body, and should therefore be resorted to solely for proper and important purposes, and then only with due precaution.

"29. The cases of natural somnambulism, so like those of the mesmeric state, the permanent magnetic power of some individuals, the relief afforded to paralysis and stupor, and the restoration from *natural* somnambulism by mesmeric passes, go far to show that the disturbance of the nervous system, which is produced by mesmerism, may and does occur in certain stages of disease, and is not unfrequently present in nervous affections where we have not hitherto suspected its coincidence.

"30. Mesmerism may, for the above reasons, be employed to relieve, temporarily, affections of a nervous character, when the usual means fail; but it should be used always with caution, and only when the failure of all ordinary measures renders its application a matter of necessity.

"31. The claims to a peculiar *medical intuition*, set up by magnetized persons, or their exhibitors, is destitute of foundation. The pathology is usually absurd, the prescriptions are inefficient, dangerous, or ridiculous, and after sixty-eight years, mesmerism has not detected a new theory of disease, or suggested one useful remedy.

"In conclusion—I may be, perhaps justly, charged with giving to the subject of mesmerism an undue importance, and bestowing on it, a disproportionate share of time and attention. The results, being chiefly negative, add almost nothing to our stock of knowledge, and the pretensions now *demonstratively* overthrown, being discarded already by common sense, and the antecedent labours of others, scarcely deserve, in the opinion of the world, a passing notice. But I think I am justified in my laborious investigation, by the interest still felt in the subject, over a large part of the civilized world, by the want of digested and comprehensive facts, and by the bearing of the phenomena on the practice of medicine, and on the physiology of the nervous system. Perhaps, too, it may not be unimportant to the guardians of public and private morals, the administrators of justice, and the conservators of family and educational discipline, to learn, what unsuspected physical agents are at work on the human frame, at all times, and in all places. They may thus be enabled, not only to guard against abuses, but to make indulgent and charitable estimates of the character and extent of crime and error.

"Doubtless, the mesmerists will say that I pay too little attention to the testimony of others on many of the points in which I differ from them, and others may allege that for all that part of the subject which I admit to be true, I give too much weight to my unsustained personal labours and observations. To both, I may with truth, and without undue pretension reply, that I did not expect to settle any question *definitively* by these researches. They were made carefully and honestly, and the results set down without exaggeration or extenuation, for the purpose of making as close an approximation to an obscure truth, as the time and opportunity would permit. Others, following in the same exact path, may enforce or weaken my conclusions; but sure I am, that it is only thus that we shall finally settle these vexed questions, and not by opinions founded on unrecorded observations, or vague generalities derived from loosely kept records. While I find volumes of conclusions, I discover no tables to which I can refer for support or refutation. I see many edifices, but I discover no foundations for them, and naturally infer that as they rest on no solid bases, they are without weight, and made of imagination.

"As to the charge of refusing the testimony of others, I answer, that their evidence is so conflicting as to destroy itself. The most substantial proof, that of distinguished medical men, is usually on my side, and if I have not availed myself of that, how can those complain who give *opinion* on the other side. Few are competent to observe, in a question involving medical knowledge, and scientific attainment. He who would truly understand such phenomena, must know all that is known of the nervous system, and much that is taught as physical science. He must have studied also the human mind in health and disease, and have examined the kindred complaints of somnambulism and catalepsy. Now, it is not a little remarkable that the authors who have written in favour of the higher claims of mesmerism, have not been thus prepared, while the more accomplished observers have decided against those claims. Let me illustrate this farther. Phenomena are observed in the heavens—among the stars.—Every one sees them—but to whom do we look for the explanation by which these phenomena are fashioned into facts. For how many thousand years did the constellations glide across the zenith, in nightly brilliancy, observed by millions of eyes, before the splendid phenomena assumed to the human understanding the shape of a fact. Until explained by Copernicus, it was a bright illusion—the *very opposite of that which it seemed*. If this illustration does not lessen the confidence of ignorant observers in their powers of discrimination, I am at a loss for means to teach them humility, which can alone give much value to the observations of any one, however otherwise prepared for investigation.

That sleepers often describe well distant places and events, is true; but does it follow that they obtain the knowledge by spiritual inspection? Or are they indebted to other and more intelligible means of discrimination? It is not less true, that there is sometimes the manifestation of strong personal sympathy between mesmerizer and subject, but are there not unexamined sources of error in the most obvious explanation of this phenomenon? The dispute is less as to the appearances, than as to the view to be justly taken of them. The vast and airy beings that darkened for ages the skies of the Brocken Mountain, were the wonder and terror of the ignorant peasantry, until more competent observers proved them to be the shadows of human beings, cast by the rising and setting sun in exaggerated volume, on a screen of clouds. That which had been a frightful phenomenon, became an agreeable fact. The shadowy things of artificial somnambulism have long enough displayed their visionary forms on the sky of human wonder. It is time to give them that true import which will take them from the mountebank and pretender, and place them in the hands of philosophy. If I can believe that I have done so much as to bring philosophy to the task, free from prejudice and restraint, I shall be satisfied that my labour has not been in vain."

ART. XVI.—*An Elementary Treatise on Auscultation and Percussion, or the Application of Acoustics to the Diagnosis of Diseases, with a Synoptical table.* By A. RACIBORSKI, M. D., &c. Translated with notes, &c., by MINTURN POST, M. D. New York, Collins, Keese & Co., 1839, pp. 261. 1 plate.

THE excellent manual of Raciborski on auscultation and percussion, of which the above is a translation, appeared some years since in Paris. It is divided into two parts, the first of which opens with an account of the history of percussion, the mode of its employment, and the general results to be derived from it. Next we have a most accurate and minute description of the mode in which the thorax should be percussed, the different characters of the sounds elicited in its several sections in the healthy state, followed by an account of the abnormal conditions of the contained organs, and the modification of sound thence resulting. The application of percussion to the exploration of the abdomen is next noticed.

A similar plan is adopted in treating of auscultation, except that here a larger space, comparatively speaking, is occupied with a disquisition upon the structure of the lungs, and upon the anatomy and physiology of the heart's action. Upon the first of these subjects, the translator has added in a note the important results of Dr. Horner's observations.

The second part of the work is occupied with a short account of the application of the processes just mentioned, to the diagnosis of particular pectoral and abdominal affections. The whole concludes with a synoptical table, in which you may see at a glance to what condition of organs any particular sound corresponds, the mechanism of its formation, and the diseases in which it is found.

The descriptions are lucid and concise, and the style of the present edition highly creditable to the translator. In short, it is an excellent manual for the student in auscultation and percussion; one of the best indeed which we have met with.

T. S.

ART. XVII.—*The Evolution of Light from the Living Human Subject.* By Sir HENRY MARSH, Bart., M. D., &c. &c. Dublin, 1842, pp. 59, 8vo.

THE subject of this paper is a very curious one, and well deserving of further investigation. The author has collected a number of striking instances of luminousness throughout the extended range of inorganic and organic matter, and re-

lates four remarkable instances in which it was observed emanating from the human body. In all these cases disease had made deep ravages in the system.

Sir Henry conceives that this phenomenon has the closest analogy to the phosphorescence generated in organic bodies at the period of incipient decomposition, and that a process analogous to decomposition may take place in the human frame whilst yet the living principle remains. Disease implies, he maintains, and with justice, that to a certain extent, however slight that may be, the vital property is impaired and altered, and that unless combatted by art, and stayed in its progress by the restorative power implanted in the living system, it will inevitably lead to that condition which gives to the chemical actions the ultimate mastery over the vital; and he believes that while the flame of life flickeringly burns on, the diseased or injured part may be reduced to that state which in animal matter is perfectly analogous to the first and earliest stage of decomposition; and other conditions existing, light may be evolved precisely in the same manner as this phenomenon is produced in the dissecting-room, in burial-grounds, and in marine animals during the early stage of decay. It is not improbable, he adds, that all cases of this kind may ultimately be referred to one common head—to chemical actions in peculiar conditions evolving light through the instrumentality of electrical phenomena.

ART. XVIII.—*A System of Human Anatomy, General and Special.* By ERASMUS WILSON, M. D., Lecturer on Anatomy, London. American edition, edited by Paul B. Goddard, A. M., M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. &c., with one hundred and seventy illustrations by Gilbert. From the second London edition. Philadelphia, Lea and Blanchard, 1843, pp. 576, 8vo.

IN our last Number, p. 442, we noticed this excellent and beautiful work, and it is only necessary now, in noticing the American reprint, to say, that in point of beauty, it equals the original, besides being enriched with some additions, both to the illustrations and text, by Dr. Goddard, whose competency for the undertaking is sufficiently well known.

ART. XIX. *A Treatise on the Diseases of the Eye.* By W. LAWRENCE, F. R. S., Surgeon Extraordinary to the Queen; Surgeon to St. Bartholomew's Hospital and Lecturer on Surgery at that Hospital; Surgeon to Bethlem and Bridewell Hospitals; and late Surgeon to the London Ophthalmic Infirmary. From the last London edition. With numerous additions and sixty-seven illustrations by ISAAC HAYS, M. D., Surgeon to Wills Hospital, Physician to the Philadelphia Orphan Asylum, Member of the American Philosophical Society, &c. &c. &c. Philadelphia, Lea & Blanchard, 1843.

THE treatise of Mr. Lawrence has been for some time before the profession, and as is well observed in the advertisement by the American editor, "the character of the work is too well established to require a word of commendation, being justly considered the best we possess on the subject."

The notes and illustrations, added by Dr. Hays, whose devotion to the study of diseases of the eye peculiarly fitted him for the task of annotating the work, and who, in addition to his own ample experience, has availed himself of the use of important matter, derived from the works of Mr. Mackenzie and others, are extremely valuable; some of these we shall briefly notice.

The anatomy of the eyeball and its appendages, as well as the more important operations, are illustrated in the American edition by wood-cuts, well calculated to convey to the reader correct impressions on these subjects. Speaking of the intimate structure of the iris, the editor states that, the recent experiments of

Prof. Grimelli of Modena corroborate the opinion of Arnold, and concludes "That contrary to the generally admitted opinion on the muscularity of the iris, as it appears to the author, this membrane is composed of a turgescible or erectile vascular tissue, in which arterial vessels predominate."

In the chapter on the formation of an artificial pupil, Dr. Hays has extended and elucidated the account of Maunoir's operation, and given a detailed description of one performed by himself, which cannot strictly be referred to either of the three modes described in the text, and which he calls by *distortion*. This is highly ingenious, and consists in a simple division of about one-fourth of the cornea, near its junction with the sclerotica, and allowing the iris to prolapse, which draws the lower edge of the pupil to the incision, at which point adhesion takes place. He was led to the performance of this operation in the case narrated, by "reflecting upon the general occurrence of prolapse of the iris in wounds of the cornea, with consequent synechia anterior, and drawing aside of the pupil." We have since had an opportunity of seeing him perform the same operation in another case, with the same result.

In the twentieth chapter, some interesting remarks are made upon the inability to distinguish colours, and a case is narrated in which this was not, as usual, a natural defect, but the result of disease, which by appropriate medical treatment was cured.

In the chapter on cataract, Mr. Lawrence has altogether omitted an account of the catoptric examination of the eye, so important in the diagnosis of many affections of this organ. An omission, however, which has been fully supplied by the Editor, who gives us in treating on the physiology of the eye, the rationale of the method of examination, which we need not here notice; the remarks and cases appended to this chapter, illustrative of its value, we think it well to give entire.

"In the diagnosis of cataract, the catoptric examination of the eye affords the most unerring test.

"In the early stages of lenticular cataract the brilliancy and distinctness of the inverted image is diminished, it has no longer a sharp and well defined margin, but its outline appears shaded off. This image gradually fades with the increase of the opacity, and long before the cataract is mature the inverted image is obliterated. The deep erect image is also indistinct in the advanced stages, the anterior surface of the capsule giving only a general reflection.

"In capsulo-lenticular cataract the inverted image fades much earlier than in mere lenticular cataract, a very slight degree of opacity of the capsule sufficing to destroy its function of reflection.

"Among the numerous cases, we have seen, in which we have derived great assistance in our diagnosis from the aid of the catoptric test, we shall relate two which will serve to show its utility and to justify the confidence we repose in it.

"In September, 1839, I was invited by my friend, Dr. G. W. NORRIS, to examine a mulatto man named Peter, in the Pennsylvania Hospital, who was supposed to be affected with glaucoma. The pupils had been dilated by the application of belladonna. There was opacity in both eyes, which was denser in some parts than in others. This opacity seemed more deep seated, than is usual in cataract, and its colour was of a greenish grey. Vision, was, however, quite as good, perhaps better, than might have been supposed from the degree of opacity.

"On holding a lighted candle before the eyes, the three images were visible. The anterior upright image was natural in all respects. The deep seated upright and inverted images were dull, their margins indistinct and of an unusual reddish tint. The inverted image in one eye, disappeared as the candle was moved opposite to the more nebulous portion of the lens, and when the observer looked at the eye of the patient obliquely, the inverted image seemed to have a double point like the letter W. I did not hesitate from these phenomena to pronounce it to be a case of cataract.

"A few days afterwards this man died suddenly, and we were afforded an opportunity of examining his eyes.

"The transparency of both capsules was impaired. A narrow portion of the posterior part of one lens, extending from near the margin to the centre was quite opaque, and on applying a needle to it we found it quite soft so as to be readily removed, leaving a depression. On carefully washing both lenses so as to remove their superficial layers which were softened, as well as partially opaque, the remaining portion was found perfectly transparent and of a beautiful amber colour. This colour was the same whether the lens was viewed by transmitted or reflected light.

"The second case was that of a man named Christian Minster, forty years of age, admitted into Wills Hospital, October 7th, 1841. This man stated that he had recently come from the country, that he had been admitted in one of our public institutions, where he was pronounced to be labouring under cataract, and it was determined to operate upon him; but that being unwilling to submit to this he had eloped. A letter which he showed from his physician in the country, also indicated his disease to be cataract.

"The opacity behind the pupil had certainly a great resemblance to that of cataract. The degree of vision he enjoyed corresponded to the degree of opacity—the independent and associate motions of the iris were tolerably active—and the patient saw best by twilight.

"On applying the catoptric test, however, it was at once found to be a case of amaurosis, and not of cataract. The three images were visible and of their natural appearance. The history of the case led me to ascribe the amaurotic affection to congestion of some portion of the nervous apparatus, and a course of treatment corresponding to this view was directed, consisting of counter-irritation to the back of the neck, purging, stimulating pediluvia, &c. Under this course he improved so rapidly that in a week he could read with one eye a diamond bible. He subsequently had a relapse, but by the application of cups to the head, pustulation with tartar emetic on the back of the neck, and afterwards pytalism, he was completely restored. He was discharged cured in January following."

The case of Michael McConville, related in the No. of this journal for Nov. 1839, might have been adduced as a further exemplification of the value of this test. This man, who laboured under amaurosis, was four times operated upon for the removal of cataract.

In the chapter on Strabismus, much additional matter has been introduced; Dr. Hays thinks the operation useful when skilfully performed in cases which are judiciously selected, but not so generally successful as we have been led to suppose: he says, "the correctness of this inference will be at once assented to, when it is considered, that such a mania has prevailed among some surgeons for operating, that they have seized upon every case suitable or not, and that almost everywhere, the greater number of cases have fallen under the knife of unprincipled operators, attracted to them by false statements of success widely circulated in the public papers, with the certificates of cases given to them by those whom they had duped."

In the chapter upon fistula lachrymalis, the Editor states, the ordinary operations described in the text, are rarely requisite for the re-establishment of the passage for the tears to the nose; that all cases in which the inflammation has not been so violent as to cause complete obliteration of the nasal ducts, may be cured by recourse to proper methods of dilatation, upon the same principles which would guide us in the treatment of strictures elsewhere. In these remarks he is borne out by the experience of Mr. Travers.

Sufficient has been adduced, to show the nature of the additions made by Dr. Hays, and to authorize us in recommending the work to all those who are desirous of obtaining correct information upon a class of diseases, the proper treatment of which is of the highest importance, but unfortunately by the mass of the profession in this country, almost wholly neglected.

G. F.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *New Process for Anatomical Injections* — In a letter addressed to the Academy of Sciences, Paris, July 12, 1841, M. DOYERE gives the following account:— I have employed, for nearly two years, a very simple process for obtaining fine injections. This process, which I believe likely to render some service to the anatomy of structure, and probably also to pathological anatomy, essentially consists in causing to enter in the same vessels, *within a certain interval of time*, two finely filtered saline solutions, which, by double decomposition, give an abundant and opaque precipitate. This succession of two injections is that which distinguishes my process from many others tried without success to obtain the injection of the capillary system by the same principle. I inject the second solution, as soon as the first has passed from the arterial system into the venous and lymphatic systems.

I have tried on animals a great number of insoluble salts, with a view to determine those which would give the most satisfactory results. I prefer to all others the chromate of lead. I first inject the chromate of potass, and am convinced that the order of injection is a point not to be neglected. A blue colour may be obtained by the precipitation of Prussian blue; brilliant red by iodide of mercury; white by the carbonate or sulphate of lead. The first has better succeeded with me than the carbonates and sulphates of lime and baryta.

The advantages which this process appears to me to possess over those in use, are above all to shorten the process of making fine injections, and to supersede any other preparation. It may be used with equal advantage cold or hot, in general or partial injection; the materials employed are unalterable, and may be consequently always ready. I will add, that the most minute injections required only a pressure which was evidently less than that of the heart's action. M. Poiseuille, to whom I made the process known several months since, in order that he might make use of it in his particular researches, has constructed an instrument by the assistance of which he can inject either liquid with that degree of pressure he considers proper.

By the assistance of this process, I have more than once succeeded in injecting by the femoral artery in a single operation, and in a few minutes, the capillaries of the muscular system in an entire animal, the adipose and cellular systems of the white and gray matter of the brain, of the conjunctiva, of all the mucous membranes, intestinal villousities, &c. The capillaries thus injected by the chromate of lead are more filled, especially after drying, than by the injections of size, but less than by those of varnish (*vernis*); there also remains some doubt in my mind relative to the actual diameter of the latter canals. Those which run parallel to each primitive muscular fasciculus, to the number of four or six, appeared to me to possess, in the dog, $\frac{1}{400}$ th or $\frac{1}{300}$ th of a millimetre; but it is possible that their dimensions had been reduced by the action of one or the other of the two solu-

tions employed, or that they had not been sufficiently filled. I am now engaged in determining the relation which exists between the size of injected vessels, and their size during life.—*Microscopic Journal*, from *Comptes Rendus*, July 1841.

2. *Anatomy of the Par Vagus and Nervus Accessorius*.—There is an interesting paper on this subject in the *Edinburgh Med. and Surg. Journ.* for Oct. last, by JAS. SPENCE, Esq.

It is well known that a considerable difference of opinion has of late existed among anatomists and physiologists regarding the exact functions of the par vagum; some maintaining that it is entirely sensiferous and incident, while others have maintained that it also contains a few motor filaments. Scarpa, Arnold, Bischoff, Valentin, &c., have asserted that all the motor filaments of the pharyngeal and laryngeal branches of the par vagum actually come from the spinal accessory; while Müller, John Reid, Volkmann, &c., maintain that a few motor filaments are bound up in the par vagum at its origin, though they admit that the greater number of the motor filaments found in the trunk of this nerve, as it lies in the neck, are derived from the spinal accessory. Mr. Spence has proved, by accurate and minute dissections, that a few of the filaments of the par vagum are non-ganglionic or motor, passing over the superior ganglion of this nerve, and joining themselves to the internal root of the accessory. The white nervous cord so formed by this junction can be traced down over the inferior ganglion of the vagus to which it gives one or two delicate filaments, and at last seems principally to pass into the formation of the inferior laryngeal nerve.—*Lond. and Edin. Month. Journ. of Med. Sci.* Nov. 1842.

3. *On the Influence of Lactation in preventing the recurrence of Pregnancy*. By T. LARCOCK, M. D., Physician to the York Dispensary.—The influence of lactation, in preventing the recurrence of pregnancy, has never yet been fairly estimated. It is generally taken for granted, indeed, that pregnancy will not occur during lactation, as well as that prolonged lactation must be injurious to the health. Neither of these opinions are strictly correct.

Mr. Robertson of Manchester made inquiries of 100 married females, and ascertained that one-half, or 50 per cent. conceived during lactation. Mr. Robertson, however, did not ascertain how often pregnancy took place during suckling—an important fact to be known, as will be seen from the following inquiries I have made on this subject.

As it has been objected to Mr. Robertson's inquiries, that they were made amongst the lower or labouring classes of a manufacturing town, I wrote to one or two professional friends, in agricultural districts, to request their assistance; while, at the same time, I made inquiries in York, where the population can be considered neither manufacturing nor agricultural. Inquiries were made of 135 married females, with the following results:—209 pregnancies took place during 766 lactations, or at the rate of 1 in 3.66, or about 27 per cent.

The 209 pregnancies occurred in 76 females as follows:—

No. of Females.	No. of Children.	No. of times pregnant during lactation.	Average.
30	163	30	1 in 5.4
12	65	24	1 in 2.6
10	78	30	1 in 2.6
13	93	52	1 in 1.8
3	25	15	1 in 1.6
4	29	24	1 in 1.2
2	14	14	1 in 1
2	25	20	1 in 1.2
76	492	209	1 in 2.36

The average duration of lactation in the 135 females was 13 months nearly;

of the 76 it was 14.4 months. It will be seen, that in 30 of the 76 who became pregnant during lactation, pregnancy so occurred only once; so that, for practical purposes, these might be deducted. This reduces the number of females who conceived while suckling, to 46, or 33.9 per cent., being nearly 1 in 3. This is below Mr. Robertson's estimate. If, however, the whole number be taken, the proportion is 56 per cent., being higher than Mr. Robertson's estimate. From the inquiries I made, it appeared very evident that there were two classes of females. In the one, the pregnancy during lactation was the rule; in the other the exception. Of the former class there appear 19 only in the 135, or 1 in 7. These 19 females averaged five children each; nine of them had 46 children, and always became pregnant during lactation; ten had 48 children, and each of the ten escaped, becoming pregnant only once during lactation. The period of lactation, at which pregnancy took place, varied from three months to two years. The average in 108 instances was $12\frac{1}{2}$ months. The average age of 135 females at the time of marriage was 22 years; the average number of children weaned 5.7. Some remarkable cases occurred to me in the course of my inquiries. One individual had an infant at the breast during the whole period of pregnancy, and continued lactation after parturition; so that she had two nursing at once. Another female in a village near York, gave the breast to one of her sons until he was eight years old, and a strapping fellow he was at five-and-twenty, when I saw him. The same person nursed three children for two years each.

She never became pregnant during lactation. Neither did another female who nursed three children for two years, and four for a year and a half. Another individual who had six children had always the catamenia during lactation, but never became pregnant before weaning. To the inquiry as to the state of the health during lactation, the answer was almost invariably "good." Often the individual observed, that she was always in the best health while nursing.

Having been assisted in these inquiries by several professional friends, I could not trespass upon their time by requesting answers to a numerous set of questions. In any future inquiries, the condition in life should be actually discriminated, and the state of health, where pregnancy occurred during lactation, particularly inquired into. My own opinion is, that where this occurs as an *exception*, it will be found the health of the individual has been below *par*; so that lactation has been irregularly performed. It is not unlikely, indeed, that the great fecundity amongst the lower classes, and also the fecundity observed after a famine or destructive epidemic, may be dependent upon this preponderance of the ovarian over the mammary influence. I believe, however, where pregnancy during lactation is the *rule*, there will be rather a full state of health, the feminine characteristics of the individual strongly marked, and great fecundity. This peculiarity of the female seems hereditary. I traced it to the third generation in one family, and to the second in three or four. It is an interesting subject for further inquiry.—*Dublin Medical Press*, Oct. 26, 1842.

4. *Additional Remarks on Fibrine.* By MARTIN BARRY.—On examining coagulated blood, Dr. Barry finds that it contains discs of two different kinds; the one comparatively pale; the other very red. It is in the latter discs that a filament is formed; and it is these discs which enter into the formation of the clot; the former, or the pale discs, being merely entangled in the clot, or else remaining in the serum. He thinks that the filament escaped the notice of former observers, from their having directed their attention almost exclusively to the undeveloped discs which remained in the serum, and thus conceived that the blood-discs are of subordinate importance, and are not concerned in the evolution of fibrine.

To render the filament distinctly visible, Dr. Barry adds a chemical re-agent capable of removing a portion of the red colouring matter, without altogether dissolving the filament. He employs for this purpose chiefly a solution of one part of nitrate of silver in 120 parts of distilled water; and sometimes also the chromic acid. He admits that the use of these re-agents would, on account of their destructive tendency when concentrated, be objectionable as proofs of the absence of any visible structure; but as the point to be proved is, that a certain

specific structure does exist, he contends that the same appearance would not equally result from the chemical actions of re-agents so different as are those of chrome and the salts of mercury and of silver. After the appearance of the filament, thus brought to light, has become familiar to the eye, it may be discerned in the blood-discs when coagulation has commenced, without any addition whatever. Those blood-discs of the newt, which contain filaments, often assume the form of flask-like vesicles, the membranes of which exhibit folds, converging towards the neck, where, on careful examination, a minute body may be seen protruding. This body is the extremity of the filament in question, its protrusion being occasionally such as admits of its remarkable structure being recognised.

The author proceeds to describe various appearances which he has observed in the coagululum of the blood, and which strongly resemble those met with in the tissues of the body, and are obviously referable to a similar process of formation. He bears testimony to the accuracy of the delineations of coagulated blood given by Mr. Gulliver. One of the most remarkable phenomena discovered by the author in the coagulation of the blood is, the evolution of red colouring matter—a change corresponding to that which he had previously observed to take place in the formation of the various structures of the body out of the corpuscles of the blood. He considers the production of filaments as constituting the essential circumstance in coagulation.

He conjectures that the notched or granulated fibres noticed in the blood by Professor Mayer, may have been of the same kind as the flat, grooved, and compound filaments described by himself; but he thinks that in that case, Mayer's explanation of their mode of origin must be erroneous; for they may be seen to be produced by a portion of the blood not mentioned by him—namely, the corpuscles.

Mr. Addison's discovery of globules in the uppermost stratum of inflammatory blood, and of their influence in the formation of the buffy coat, is confirmed by Dr. Barry, who remarks that these globules are altered red blood-discs. That the blood corpuscles are reproduced by means of parent-cells, as suggested by Mr. Owen and by the author, is confirmed by the observations of Dr. Remak; but the author had long ago indicated a division of the nucleus as being more particularly the mode of reproduction, not only of those corpuscles, but of cells in general. With this conjecture the observations of Remak on the blood-corpuscles of the fœtal chick fully accord. Whether the author's further speculation—namely, that the parent-cells are altered red blood-discs, is correct, still remains to be seen.

The phenomenon of the "breaking off short," or notching of the fasciculus of a voluntary muscle in a transverse cleavage of the fibre, is regarded by Dr. Barry as a natural consequence of the interlacing of the larger spirals, which he has described in a former paper; the fracture, in proceeding directly across the fasciculus, taking the direction in which there is least resistance.

The position of the filament in the blood-corpuscle is represented as bearing a striking resemblance to that of the young in the ovum of certain intestinal worms, the filaments of which are reproduced by spontaneous division. The author subjoins the following query, "Is the blood-corpuscle to be regarded as an ovum?"—*Proceedings of Royal Society.*

5. *Minute Anatomy of the Spleen.*—M. BOURGERY, who has recently devoted much time to microscopic investigations of the minute anatomy of the frame, having examined a large number of human and other spleens, states that they consist of vesicular membranes, blood-vessels, floating vascular corpuscles, a granulo-capillary apparatus, (*champ granulo-capillaire*), a splenic fluid, splenic glands, lymphatic vessels, nerves, cellular tissue, and an enveloping membrane. The first five of these compose the vesicular apparatus, the sixth and seventh the glandular, and the last three the general texture of the organ.

The splenic vesicles are found in every part of the spleen, separated by membranous walls, and of a spheroid or ovoid shape when the spleen is fully injected, of an irregular poly-hedral figure of from five to ten sides, when the organ is

inflated. The former is probably the true shape, as during life the liquids fill the vesicles, glands, and vessels. They vary much in volume, not only in different animals, but in the same spleen. In man they are smaller and more regular. In general, their medium diameter is from one to one and a quarter of a millimetre, and they do not vary one-third of this dimension more or less. These vesicles do not form simple cavities, being traversed by vessels covered with the enveloping membrane, which form crescentic folds to the extent of one-third, one-half, or the entire diameter of the vesicle, by which a series of subdivisions of the cavity are formed, at the bottom of which are found the glands, granules, and capillary arborisations in relief. They have two kinds of orifices, one of communication, *inter se*, which is irregularly circular, with its edges formed by a fold or reflected membrane from the parietes. The larger vesicles have two or three, the smaller ones have one at least, this free communication between the vesicles enabling the anatomist readily to inflate the organ not only by the veins, but by any opening made on its external surface. The orifices of communication with the veins are not so numerous as those just described; some vesicles will have two or three, while several others close by have not one between them. These orifices are circular or ellipsoid, and possess an incomplete crescentic valve. They are about one-twelfth of a millimetre in diameter in man. They form the absorbent mouths of veins of the same size, which are connected with those of the intervesicular spaces.

The intervesicular spaces are formed by the separation of the enveloping membranes, and contain the vessels and splenic glands; their size depends on the degree of repletion of the vesicles. These spaces are enlarged irregularly between several vesicles, and are filled with glands.

The enveloping membrane constituting the parietes of the vesicles, is one continuous membrane throughout the entire extent of the spleen, and may be regarded as divided into a number of small isolated ampullæ, and supported by the ramifications of the vessels and by the glands. The organisation of the vesicular membrane is very complicated, as it encloses the granulo-vascular membrane with its thick network of blood-vessels and lymphatics.

M. Bourgery divides the blood-vessels into three orders—the splenic, intervesicular, and the vesicular. The splenic artery and vein divide into three or four branches, which pass directly to the surface of the organ; the veins, which are much the larger, are pierced with a number of small foramina, opening into the venulæ of the spaces; the terminal veins according to the length of their canals, end in a succession of cellules, separated by vascular bands, the organic composition of which is absolutely identical with that of the vesicles in which they terminate. The intervesicular vessels, arising from the preceding, are distributed to the glands and intervesicular membrane in the spaces. The vesicular vessels form the falciform folds already spoken of in the interior of the vesicles. Their branches project into the cavity to be distributed to the floating vascular corpuscles, resembling a bunch of grapes. On the fundus of the membrane, the terminal capillaries form the granulo-vascular network with the lymphatics. There are two kinds of veinules, the capillicules of the common network, and the veinules of absorption, which are much larger than those that open into the vesicular cavities. All the small vessels of the spleen, whether of the spaces or vesicles, are distinguished, when distended, by a continued series of swellings and contractions, which give them a well-marked knotted aspect.

The floating vascular corpuscles are contained in the interior of the vesicular cavities, where they depend, as from a pedicle, from the terminal branches of the capillary lymphatics and blood-vessels. They are formed by a lenticular nucleus, whence spring in the turgid state, small aigrettes radiating towards the circumference. These aigrettes are composed of a filament terminated by small brilliant spherules, collected in the form of a chaplet. The corpuscular nuclei are of unequal shape, and about fifteen to sixteen times the size of the diameter of the blood globules, and their capillaries have a calibre of 3.100 of a millimetre.

The granulo-vesicular membrane is composed of two elements: first, of pale spherical granules in juxtaposition, equal in diameter to four or five globules of

blood, and of arterial, venous, and lymphatic capillaries. The splenic liquid or blood appears to be the product of elaboration by the floating corpuscles and the granulo-vesicular membrane; it is deposited in the vesicular cavities, whence it is taken up by the absorbent veins of its parietes. It is thick, viscid, of a reddish brown colour, and under the microscope it appears to be composed of several kinds of globules held in suspension in a yellowish and unctuous liquid—viz., lenticular globules—some red, which do not appear to differ from the ordinary blood globules, others colourless, and whitish irregular globules, resembling those met with in the chyle and lymph.

The splenic glands united by cords of the same substance, with the ramifications of the vessels, fill up the intervesicular spaces; their greatest diameter in a state of repletion is about a quarter of a millimetre in man. In a bullock's spleen, where they are about two millimetres in diameter, they can be seen with the naked eye in the form of brown or whitish corpuscles. M. Bourguery believes these to be the glands spoken of by authors as the vesicular glands of Malpighi. These glands isolated or agglomerated in the spaces according to their size, are united by their cords into the form of chaplets, and receive a great number of lymphatics and blood-vessels. When magnified to 200 or 500 diameters, they appear to consist of granules and infinitely small capillaries. The lymphatics form a network on the surface of the gland, whence an afferent vessel penetrates its substance, subdivides into innumerable ramusculæ, forming the principal part of the gland, and terminating in an efferent vessel, which passes to the vessels of the intervesicular space. From these facts, M. Bourguery concludes them to be microscopic lymphatic glands. The microscopic lymphatic vessels arise from the granulo-capillary membrane, where they form a very close network; they unite to compose fifteen to twenty larger trunks, which enter the glands of the spaces. Their diameter is from 5. to 8.100 of a millimetre. The larger branches are provided with valves, and have enlargements, which at the points of anastomosis, resemble rudimentary glands, as if they were not only vessels for carrying the lymph, but also bore a part in its elaboration.

According to Malpighi, the spleen was composed of cellules separated by spaces; in the cells existed granulations pendent from the extremities of the arteries and nerves. The veins and arteries opened into the cellules by gaping orifices. The spaces were formed by a parenchyma, formed of fibrous and muscular bands, and contained a thickened and extravasated blood. Ruysch admitted the existence of the membranes, but denied that of the fibres and cellules, and assigned another use to the granulations. Winslow spoke of a cottony tissue, and admitted the cellules and granulations, but did not allude to the vesicular capillaries. Haller acknowledged only the cellules and granulations; a little later Assolan denied the existence of the cellules, and still later Meckel wrote against the cellules, and Cruveilhier against the granulations in man.

From these details, it appears that the spleen is composed of two distinct apparatuses, the vesicular and the glandular, divided into little organules, in juxtaposition throughout the entire organ. Of these, the vesicular apparatus constitutes three-sixths of the spleen; the glandular two-sixths; the remaining one-sixth being formed by the vascular arrangement. The vesicular apparatus or succession of vesicles, is continuous throughout, *inter se* by orifices of communication, and comprises the splenic veins, the corpuscles, and the granulo-capillary membrane. It constitutes a long canal, everywhere folded on itself, and divided by vascular bands into myriads of little cavities to increase the surfaces. The texture of these vesicles and the nature of the liquid they contain cause them to be regarded as an apparatus for the elaboration of blood.

The glandular apparatus is composed of glands and lymphatic vessels. It consists of a tortuous chain of glandules connected by cords of the same substance, and situated between the vesicular ampullæ. It may be regarded as one large lymphatic gland, broken down into smaller ones, in order to surround the vessels throughout the entire extent of the spleen. The capillary blood-vessels assimilate somewhat in texture to the organ itself, the veins forming part of its tissue, and participating in its functions, while the lymphatics appear to be not

merely vessels for transmitting the lymph, but at the same time organs for elaboration. The anatomical arrangements are the same throughout the mammifera, but in man they are more precise and defined, marking the perfection of the organ, which is much more simple in its organisation in animals.—*Prov. Med. Journ.*, Oct. 1, 1842, from *Gazette Méd. de Paris*, June 1842.

6. *Nature of the fat substance of Milk.*—M. Romanet asserts that the globules of the milk are entirely formed of butter, which exists as a pulp enveloped in a white, translucent, elastic, and resistant pellicle; and that this cyst is broken in churning, by which the butter is allowed to escape, and the pellicles floating about separately constitute the white particles which give consistence to the buttermilk.—*Comptes Rendus*, April 4, 1842.

7. *Virey's Objections to LIEBIG's Theory of the Uses of Respiration and of Food.*—Liebig maintains that the chief use of the food is to supply carbon and hydrogen, which, uniting with the oxygen absorbed from the air, give rise to the generation of animal heat. He consequently holds that there is a certain fixed relation between the amount of food consumed, and the quantity of carbon and hydrogen thrown off at the lungs. M. Virey opposes this theory, as contrary to common observation, as, even though it be allowed to be applicable to mammalia, birds, and reptiles, it is by no means to those animals which respire by means of branchiæ. Thus all animals with branchiæ consume but little oxygen, comparatively speaking, and yet many of them devour very great quantities of food. Even the largest and most voracious of the reptiles, as the alligators, crocodiles, &c., which devour enormous quantities of food, under a burning climate too, respire feebly with their vesicular lungs, and consume but little oxygen.

Fishes, whose blood is but imperfectly oxygenated by the branchial apparatus, are perhaps among the most voracious of animals, and yet, according to Liebig's theory, they ought to eat little, because they consume little oxygen.

The same holds true of the Mollusca. The cuttle-fish, *buccinum*, *strombus*, *murex*, &c. grow to a large size; but their respiration is very imperfect, and yet they are great flesh-eaters. The Crustacea, again, as the crabs, lobsters, &c., grow rapidly, because they are great eaters; but their branchial apparatus is not fitted to consume much oxygen.

In all these animals assimilation takes place very rapidly, notwithstanding their feeble respiratory powers; and they are, besides, by no means deficient in activity or muscular powers, though their flesh be but feebly azotized or animalized, and their blood is always cold.

If it be one of the characters of vitality, that the more perfect this principle is, the greater is the number of germs, or eggs, or fetuses produced, then, quite contrary to Liebig's theory, the number of germs produced is in the inverse ratio of the perfection of the respiratory functions. Fishes and mollusca deposit their spawn or eggs by millions; but the mammalia, and even the birds, whose respiratory functions are the most perfect, are in this respect infinitely behind these. On the other hand, it is seen that the number of germs or eggs is rather proportioned to the nutrition received; for the amount of food taken is not proportioned to the respiration in the animal kingdom.

M. Virey therefore concludes, that the vital force or central nervous energy has more to do with the production of animal heat than the consumption of carbon at the lungs, and this for three special reasons;—1st, Because a fecundated egg resists a freezing temperature longer than one which has not been fecundated. 2d, That a hibernating insect, reptile, or animal, or even trees during winter, by the sole influence of a vital power, resist a freezing temperature, whereas the same animals, if dead, would be instantly frozen. 3d, That many mammalia and birds keep themselves warm even in the most rigorous winters under the Pole, not in consequence of a greater amount of oxygen consumed, nor by a greater amount of muscular activity, but in consequence of a more abundant highly azotized or animalized nourishment.—*Journ. de Pharm.*, May, 1842.

MATERIA MEDICA AND PHARMACY.

8. *Observations on Discoloration of the Skin from the internal use of Nitrate of Silver, and on the means of preventing and removing that effect.* By CHARLES PATTERSON, M. D.—Nitrate of silver is undoubtedly a medicine of great service, especially in the treatment of various spasmodic diseases, but the danger of producing discoloration of the skin by its internal administration, prevents its employment as extensively as might otherwise be the case. It must therefore be an object of importance to devise some means of preventing that untoward effect.

Dr. Patterson first quotes the opinions of Dr. A. T. Thomson on the subject, who supposes that the nitrate is taken into the circulation undecomposed, and, arriving in that state at the capillaries of the skin, is there decomposed, and converted into chloride of silver, which is deposited in the rete mucosum. The chloride, he says, acquires a gray leaden colour from its contact with animal matter; and, as it is insoluble, it is incapable of being reabsorbed, is fixed in the rete mucosum, and a permanent stain is given to the skin. Dr. Thomson suggests that, by ordering diluted nitric acid, at the time of administering the salt, its decomposition may be effected.

In opposition to these views of Dr. Thomson, Dr. Patterson quotes various experiments which he has made, and then brings forward his own conclusions, viz. that the chloride of silver is not the colouring ingredient on which the blackness of the skin depends; but that the discoloration of the skin is most probably owing to the decomposition of the chloride of silver circulating in the cutaneous tissue through the chemical action of the sun's light, and the deposition there of its metallic basis. All persons are not subject to this accident; for the influence of the sun's rays can only be effective in those cases where the cutis is more than ordinarily vascular and is clothed with a thin transparent cuticle.

The permanence of the stain is not easily accounted for; but it would seem that the metals constitute one class of substances for which the absorbents have no attractive affinity, as is shown in those instances where bullets have remained for years in the body, in the use of metallic ligatures, and in the internal exhibition of quicksilver.

Means of Prevention.—Nitric Acid.—Dr. Patterson considers that the contemporaneous administration of nitric acid, with the intention of preventing the decomposition of the nitrate of silver, must be entirely useless. The nitric acid undergoes decomposition in its passage through the circulation, and consequently can hardly reach the surface of the body to influence the chemical changes there in operation: and even if it did, and met with nitrate of silver there, its action would be to promote and not to retard the formation of the chloride of that metal; for this reason, that coming into contact with the soluble muriates, it would decompose the muriatic acid, with the evolution of free chlorine.

The conclusion to which Dr. Patterson comes on this subject is, that the only way to prevent all risk of discoloration, would be to substitute for the nitrate, some preparation of silver not liable to be acted on by chlorine, or the sun's light. And happening to be employed in some photographic experiments, his attention was directed to the property displayed by solutions of the iodide of potassium in rendering nitrate of silver insensible to the influence of the sun's rays. When a piece of paper was washed with solution of nitrate of silver, and then immediately immersed for a few seconds in a solution of hydriodate of potash, its colour, even when exposed to the strongest sunshine, remained unaltered. It was evident, in this process, that the hydriodate and the nitrate were both decomposed, and that an ioduret of silver was the result. It then remained to be determined whether, in contact with animal matter or medicinally administered in combination with chemical agents, it would retain that power.

To ascertain this point various experiments were executed;—the ioduret was mixed with different animal and vegetable substances, and submitted to the ac-

tion of different chemical agents, and then exposed to the action of the sun, without, however, producing the least change of colour.

Having thus satisfied himself as to the chemical habitudes of the ioduret, Dr. Patterson's next endeavours were directed to ascertain its therapeutic effects. The first and principal class of diseases in which opportunities were afforded of administering it, were those various stomach affections to which the Irish peasantry are so very liable, and in which the internal use of nitrate of silver has been found to be most generally successful. They, therefore, afford the best criterion whereby to judge of the comparative efficacy of the ioduret. In such, a number of which Dr. Patterson relates, it proved almost uniformly beneficial. In epilepsy the result was not so satisfactory; but as the medicine was only administered in two cases, it has not had a fair trial in that disease. In whooping-cough it had variable success, but where that complaint was uncomplicated with fever or bronchitis, the ioduret appeared to produce an immediate improvement in the spasms, and hastened the final abatement of the cough. Sufficient time, however, has not yet been afforded, to allow of any definite conclusion to be come to on the subject.

Removal of discoloration of the Skin.—Dr. Patterson considers that “there can scarcely be a doubt that in those cases, where the skin has become discoloured from the long use of nitrate of silver, the discolouration may be removed by the internal and external employment of suitable preparations of iodine.”

The following is the formula which Dr. Patterson employs for the administration of the ioduret of silver.

R. Iodureti Argenti, Nitratiss potassæ, ʒā gr. x., Tere simul ut fiat pulvis subtil. dein adde Pulv. glycyrrhizæ ʒss., Sacchari albi ʒj., Mucil. arab. q. s. M.—Fiant pil. xl. quarum sumat æger j. ter in die.—*Med. Chirurg. Rev.*, Oct. 1842, from *Dublin Med. Press*, Aug. 24, 1842.

9. *Creasote as a Therapeutic Agent.*—An interesting paper on this subject was read before the Medico-Chirurgical Society of Edinburgh, in July last, by Dr. Cormack; an abstract of which we copy from our esteemed cotemporary the *London and Edinburgh Monthly Journal of Medical Science*, (Oct. 1842.)

“NATURE OF ITS ACTION.—Dr. C. has satisfied himself, by experiments on the lower animals, that creasote, in large doses, is a narcotico-acrid poison; and that it resembles prussic acid in its sudden depressing action on the heart, as well as in the temporary nature of its toxicological operation. In medicinal doses, it is almost immediately sedative and calming; but these effects are of short duration; so that it is a drug which requires to be given in often-repeated small doses.

“I. INTERNAL ADMINISTRATION.—*Use in nausea and vomiting.*—Creasote is one of the best medicines which we possess for stopping vomiting. In the vomiting of pregnancy, an affection so distressing to the patient, it seldom fails. If the sickness come on regularly after rising in the morning, Dr. C. prescribes two or three drops to be taken five or ten minutes before getting out of bed. This generally proves effectual; but if it does not, the patient ought to be directed to repeat the dose in two hours. In more troublesome cases, when the sickness occurs at intervals during the day, one or two drops should be given every two, three, or four hours. Dr. C. has ordered it in a great many cases of this kind; but as it is only recently that he has kept accurate memoranda of them, he only communicated the result of his last eleven cases. Nine were completely relieved; one (a dispensary patient) was lost sight of, but supposed to be relieved; and another was in no degree improved. She was afterwards successfully treated by two drop doses of the medicinal prussic acid.

“*The sickness and vomiting following a drinking debauch.* Dr. C. saw speedily relieved in two instances, by one dose of four drops. In January, 1837, Mr. Waugh, (then surgeon and apothecary in the High Street of Edinburgh), told him that he had relieved several individuals in a similar state, by small doses of creasote; but that in others he had tried it without any good effect.

“*In sea-sickness,* Dr. C. had only one opportunity of seeing its effects. CASE.

—Last summer, when going up from Edinburgh to London by sea, he observed when getting under way, a gentleman leaning over the side of the ship very sick, beside whom was a bottle smelling strongly of creasote. It turned out, that he was a great martyr to sea-sickness, and had been advised by an apothecary, to whom he had applied for some remedy to be provided with, to take the creasote mixture which attracted Dr. C.'s attention; but that it had had an effect directly the opposite of what was intended; for no sooner did he swallow the first dose, than he was seized with retching. Upon the following day the weather was rough, and the creasote gentleman became exceedingly sick. In desperation he applied again to the reputed specific, when the very same dose that had on the previous day made him squeamish and sick, on this trial almost entirely relieved him. The quantity of creasote contained in his mixture was not ascertained. *It is well worthy of notice, as a general remark, that creasote though excellent in allaying vomiting, often excites it when it does not exist.* Vomiting is caused by creasote very frequently in cases where the dose is too large for the individual. If the statements of many can be relied on, it seems worthy of trial as a remedy in sea-sickness.

“In vomiting connected with hysteria, creasote proves a very valuable remedy, and so far as Dr. C.'s experience goes, he is inclined to think, that Dr. Elliotson and others, who have recommended it very strongly in this class of cases, have not done so without sufficient cause. In at least ten cases of this kind, Dr. C. has tried it in doses varying from two to eight drops, and in all, excepting one, it proved an admirable medicine, not only relieving the vomiting, but also apparently, in most instances, calming the nervous excitability. In the case in which it apparently did no good, the dose could not be increased beyond six drops thrice a day, on account of the vertigo which it occasioned. The patient was ultimately much benefited by sponging with cold water, and taking four grains of the saccharine carbonate of iron three times a-day. CASE.—Patient—A young woman, exhibiting many of the anomalous symptoms so common in hysteria. When first visited, she was emaciated, weak, nervous to a distressing degree; stated that she vomited her food, and had done so for ten days, but had had sickness in the mornings for a much longer period. She had been trying various tonics. None of them did her any good, and they were generally rejected soon after they were swallowed. Dr. C. ordered her to breakfast in bed, and that sparingly, on the morning following his visit, and half an hour before doing so, to take a dose of a mixture, containing three drops of creasote, in acetic acid. After her meal, she had only slight nausea. She sponged her chest with vinegar and water, and before a light dinner, repeated the dose, but had a good deal of vomiting, though not so much as usual. As the creasote had produced no giddiness or uneasiness of any kind, the quantity was increased on the following day to five drops before breakfast and dinner. For a week after this, she had neither nausea nor vomiting; but both having then slightly returned, for five days the dose was increased daily a drop, till at last, she was taking ten drops twice a-day. From this time the vomiting did not return for three weeks, during which time she persevered in the medicine, and under its use, daily gained strength and flesh; the catamenia, which had formerly been scanty, became much more abundant. As she now complained of headache, and attributed it to the creasote, it was discontinued, and the saccharine carbonate of iron substituted, in doses of four, and afterwards five grains, three times a-day, in pills made up with the extract of gentian. She continues to use the iron, and has latterly, with great benefit, taken the shower-bath. Once or twice the vomiting has returned, and been promptly relieved by the creasote. In this case, the creasote did more probably than relieve the vomiting. It is, however, proper to state, that along with the creasote, from the commencement of the treatment, great attention was paid to the bowels, which had formerly been neglected. She took the compound aloes and assafoetida pill so as to have at least one stool daily, whereas formerly, she rested satisfied with two, or even with one a week; this of itself must have greatly contributed to the cure.

“In all of the hysteric cases of vomiting, there existed constipation, which

was actively dealt with; but as in the case now detailed, the vomiting was relieved by the creasote, before the purgative treatment could have developed its effects. From a number of cases, creasote appears to be valuable in hysteria, not only for the vomiting, but also in assisting to control many of the fantastic and distressing symptoms of this Protean malady.

"In vomiting from various causes not yet specified, creasote may be used with great benefit. In about twenty or thirty such cases Dr. C. has tried it with advantage. Of thirteen cases he has kept notes. Seven of these were phthisical. Relief was afforded in five of them. In the other two, it seemed to do no good whatever. In one of the seven successful cases, after morphia, strong coffee and other things which used to succeed with the patient, had failed, a dose of three drops stopped the retching in as many minutes. In three of the thirteen cases it was given to stop vomiting, caused by taking croton oil in neuralgia, and in every instance succeeded, though in one of the instances fifteen drops were required to be taken within half an hour. This is the largest quantity of creasote which Dr. C. administered within so short a time. In two of the thirteen cases, the patients were lost sight of; but the affections were supposed to be hysteria, or pregnancy. The result of the first doses was good. One of the cases may be briefly detailed. CASE.—A. E., a boy of about ten years of age, was under the treatment for tape worm, and had vomited one or two days before he was seen. During that and the preceding day, he had very severe vomiting, and had been unable to take either food or medicine. At the time of the first visit, he had retching every ten minutes. Creasote fortunately being at hand, one drop was immediately administered in a little mucilage. This did some good. The dose was repeated in ten minutes, and during the following hour he had neither vomiting nor retching; but at the end of this period, there being a return of the symptoms, a third dose was given. After this, they did not recur during the following eight days that the patient was under observation. Dr. C. saw this case along with Dr. David Macfarlane, now at Drymen. CASE.—The following case, which has been communicated by Professor Simpson, may be mentioned in this place. Some years ago he operated on a man at Falkirk for strangulated hernia. Great vomiting ensued, which did not yield to opium, though given in large doses, and a mustard blister was also applied over the stomach, without any good effect. One dose of two drops of creasote completely relieved the sickness and vomiting.

"Combining creasote with drugs which have a tendency to produce nausea, Dr. C. finds often answers very well, as many cases in the journals led him to expect. He has twice given it in combination with, in one case four, and in another six grains of sulphate of copper, as an astringent. In neither, was there sickness. Of course it is impossible to say with certainty, that this immunity from nausea was owing to the creasote.

"When laid up with influenza about three years ago, Dr. C. was taking a mixture containing tartar emetic, which produced considerable nausea and vomiting, which induced him to embrace the opportunity of observing the effect of creasote in such circumstances. He took two or three drops, which speedily checked the retching. After resting about an hour, he resumed the mixture, which again produced its emetic effect, and this was again arrested by a similar dose. He afterwards took occasion to repeat this observation on two patients. CASE.—The first was a young girl labouring under a bronchitic affection. He prescribed the tartar emetic solution in the morning, and returned some hours afterwards, when he found her very sick, and when he was beside her she vomited a little. She was directed to go on with the solution* every hour as formerly, and immediately after each dose to take two drops of creasote. In the course of the next two hours, she had taken a grain of tartar emetic and eight drops of creasote, without the nausea continuing or returning. As her face was flushed, and she complained a good deal of frontal headache, the creasote was discontinued. Unfortunately the pulse was not counted before the experiment; but Dr. C.'s dis-

* Each dose contained a quarter of a grain of the tartrate of antimony.

tingent impression at the time was, that it was then stronger and fuller than afterwards. CASE.—In the other case, a grain of tartar emetic was dissolved in water, and the patient, a stout young man, ordered to take a table-spoonful every half hour, till he vomited. After taking half of the mixture, violent vomiting and retching came on, when he took three drops of creasote. This only moderated the symptoms; after five minutes, three drops more were administered, which completely stopped the vomiting. The paucity of his observations, Dr. C. stated, did not entitle him to advance any suggestions as to the application of these cases to therapeutics; but he thought that they are at least sufficient to show, that creasote can control the operation of tartar emetic. As opportunities occur, he intends to prosecute this branch of the subject.

“In *Neuralgia*, creasote has, in the opinion of many, been found useful; and from a knowledge of the sedative properties of the substance, along with some experience of it in this class of diseases, Dr. C. can easily believe that it may prove beneficial. The nine cases in which he has employed it, lose almost entirely their value as experimental proofs of its curative powers of neuralgia, inasmuch as he had in them all purged the patient steadily, and sometimes very actively, with croton oil, generally employing the creasote simply as a palliative during the paroxysms, just as at other times we prescribe henbane, the muriate of morphia, and aconite. Here it is proper to speak guardedly; but from all Dr. C. has seen and read, he thinks it may turn out to be a good medicine to use under certain circumstances in neuralgia. Creasote plasters have of late been recommended in the journals; and a tar plaster is a favourite remedy for tic among sailors. The unquestionable relief from pain which creasote gives in toothache, is also a strong reason for making trial of it as an outward application in the different forms of neuralgia. When an opportunity offers, he intends to try the effect of creasote plasters along the course of the affected nerves.

“In *Phthisis*, some have maintained that creasote is quite a specific remedy, having the power of dissolving tubercle, and cicatrizing cavities in the lungs; but which of the drugs in our voluminous catalogue of *materia medica* have not in their turn been celebrated as all-potent in conquering what, we fear, must yet be called this *invincible* disease?

“It has already been said, that creasote is useful in checking the vomiting of the latter stages of consumption; and when it is added, that its vapour sometimes produces a soothing effect, and makes the expectoration more easy, all that can be truly advanced of its uses in this disease has been stated. The vapour may be inhaled in the steam of hot water, placing the vessel under the mouth of the patient; or if this cannot be borne, the air of the apartment may easily be sufficiently saturated with the vapour, by allowing the steam of creasote water to escape for a certain time.

“II. CREASOTE AS AN EXTERNAL APPLICATION.—In *toothache*, creasote generally gives immediate relief from pain, when properly applied to the exposed nerve, in the cavity of a carious tooth. Dr. C. has in his own person made repeated trials of it, and is quite convinced, that though it gave respite from pain, it hastened the destruction of the teeth. This observation has been repeatedly made by others.

“In *arresting hemorrhage* from small vessels, or the oozing of blood from abraded or cut surfaces, bleeding ulcers, and leech bites, a creasote ointment or lotion is very often effectual. It acts by coagulating albumen, and thus forming a crust. Pure creasote may be tried when the bleeding is more profuse. In the hospital at Cadiz Dr. C. saw it used with complete success, in the oozing of blood from the wound of a compound fracture. He never had an opportunity of seeing its power over pretty active hemorrhage, in the human subject, except in this case.

“From experiments made on dogs and rabbits he is, however, quite satisfied that creasote possesses, in a high degree, the power of arresting hemorrhage from the capillaries; but in wounds, which it is desirable should unite by the first intention, its use should probably be abandoned as soon as the bleeding is fairly subdued, as, by uniting with the lymph effused, it forms a substance,

which would act as injuriously to the progress of the reparative process, as any other foreign body.

"In *chronic venereal ulcers*, Dr. C. has repeatedly used creasote with great advantage. It answers very well to apply it pure *once*, when there is great deficiency of action, and subsequently to employ an ointment of from four drops to thirty, to the ounce of lard. The lotion is also a very excellent form of application. In *phagedenic ulcers, ulcerated chilblains*, and sores yielding a sanious discharge, Dr. C. has often used creasote with great benefit.

"In the application of creasote to ulcers and other solutions of continuity, there are several facts which the practitioner should bear in mind. *It is important to remember that water only dissolves one eightieth part.* If an excess of creasote be present, it will float on the surface in small globules, and can therefore very easily be removed: but if this is not done, when the lint is dipped in the lotion, these globules will adhere, and in this way, a very different wash from what was intended, is placed upon the sore. In very few cases, where the raw surface is extensive, pure creasote ought to be applied to the whole of it, as severe irritation is generally the result. More or less inflammation, almost in every case, follows the application of the pure drug to a raw surface: it continues, according to circumstances, from a few hours to several days, and there are instances in which a poultice is quite necessary. At the beginning of the treatment, creasote, either pure or in the form of lotion, should be more copiously applied than afterwards: and as soon as a healthy granulating surface appears it may with advantage be altogether discontinued, and some of the common lotions of the metallic salts substituted. When the ointment is applied to an irritable sore, it answers very well to put a poultice above it. To chancres, creasote ought to be applied with a camels' hair pencil. One or two applications are frequently sufficient, and more may do harm.

"In a case of condylomata Dr. C. found creasote useful: and in correcting the fetor of vaginal discharges he has also several times been assured by his patients that it proved successful, but as a *remedy* for the running it is very inferior to lotions of sulphate of copper, and sulphate of zinc, and the other common washes. He draws these conclusions partly from cases which he saw treated in the Lock Hospital of Edinburgh some years ago.

"In narrating the result of most of the trials which he had made with creasote, the author stated that he offered them, not as in themselves of much value, but merely as a contribution towards a proving of its real therapeutic value. In some other diseases in which he used it, it did no good, and in some evil; but as these were maladies to which he had not adverted, it was better to defer a statement regarding them. They were cases of diabetes, dyspepsia, rheumatism, irritable bladder, and cancer. Its effects in these cases, and in skin diseases, may, at a future time, be brought before the society."

10. *Manna*.—"In the mountains above Tropicæ, are large tracts of chesnuts, and the small leaved ash, the *omas*, which produces the manna. They do not plant it, but cut down the strong stems, and spring it from the old stocks. In July, they make a small gash, leaning upwards; the second day another, and form cups with maple leaves, into which the gum exudes.

The tyranny exercised on the poor peasants in this article is very great. The manna is farmed out, and a certain number of countrymen are appointed to gather it, during which time they are not at liberty to absent themselves, or undertake the most necessary labours for themselves. They scarcely derive any benefit from their work, as they are paid five carlini for a rotulo of manna (thirty-three ounces) which the farmers sell in Naples for nine carlini a pound (twelve ounces). If they burn or destroy the trees, though wild, their punishment is very severe, and if the smallest quantity is found in their houses, they are sent to prison. Eight hundred poor men, thus oppressed, contributed two carlini apiece, for a memorial to the king, but no notice was taken of it."—*Swinburne's Courts of Europe at the end of the last century.* T. R. B.

11. *Sialagogues*.—Dr. Samuel Wright has published an elaborate and learned essay on the *Physiology and Pathology of the Saliva*, in the London *Lancet*. Among other matters, he enumerates incidentally, the various medicinal substances, which, in addition to mercury and its compounds, have been known to induce salivation. Although the fact is well understood concerning most of them, yet it may be useful to enumerate the whole in consecutive order.

1. Iodine and its salts sometimes act as remote sialagogues. *Authorities* Carro, quoted by Bayle; Dr. Manson, Cogswell's Essay on Iodine.

Hydriodate of potash has induced ptyalism, as observed by Drs. Clendenning and Wallace, and Dr. Wright himself. Cantu, Coindet and Gairdner have detected iodine by chemical tests, in the saliva of persons who are taking it.

2. *Chlorine*.—The continued use of chlorine water is said to have caused salivation. Pereira.

3. *Bromine*.—Dr. Glover produced ptyalism in dogs and rabbits by the administration of single poisonous doses of it.

4. *Digitalis*.—A case is recorded in Rust's Magazine, in which the salivary discharge continued for three weeks. Other authorities. Withering, Christison, Barton.

5. *Hemlock*.—The injection of a watery solution of hemlock into the veins of a horse has been known to produce salivation (Moiroud). Dr. Wright has known a case in the human subject from the protracted use of hemlock.

6. *Belladonna* sometimes affects the salivary glands.

7. *Arsenic*.—*Authorities*.—Marcus, Ferriar, Furley, Trousseau and Pidoux; James Johnson.

8. *Opium*, sometimes. *Authorities*, Christison, Paris, Watson.

9. The *Salts of Antimony*, particularly tartar emetic and James' powder. Magendie produced salivation in dogs by tartar emetic. So also Griffiths Jackson in the human subject. Dr. Wright has seen an active ptyalism, for a week, consequent on the use of James' powder.

10. The *Salts of Lead* occasionally.

11. *Terchloride of Gold*.—Chrestien, Niel.

12. *Prussic Acid*.—Macleod, Granville.

13. *Nitric Acid*.

14. *Nux Vomica*.—In a case of poisoning by it, a profuse ptyalism has been observed.—*London Medical Repository*, Vol. 19.

15. *Cantharides*.—Pereira mentions an instance of poisoning by it, in which ptyalism occurred.

16. *Sulphur* used internally increases the salivary secretion. T. R. B.

12. *Pharmaceutical Bread*. By HENRY DEANE.—Flour, 3lbs. imperial; cold water, 1½ pint imperial; sesquicarbonate of soda, ½ oz. (Troy weight); hydrochloric acid, 5 fluid drachms; a small quantity of salt, if required.

Mix the soda perfectly with the flour, and the acid with the water, then the whole intimately and speedily together, using a flat piece of wood or spaddle for that purpose, in preference to the hand. It may be made into two loaves, and put into a quick oven immediately. It will require about an hour and a half to bake.

Precautions. Let the soda be well mixed with the flour, for wherever a small lump of it is deposited unmixed, it is not perfectly acted upon by the acid, and causes a yellow spot in the loaf, which, however, is more unsightly than detrimental.

The acid is the muriatic of commerce, and should have a specific gravity of 1.16. It should be mixed with the whole of the water to be employed.

The water should be as cold as possible. Three pounds of flour require about a pint and a half to make it into dough of proper consistence: but as the quality of flour varies according to season, and other circumstances, a little more or less water may be used, as occasion may require.

The dough should not be made stiff. The thinner it is, so that it may be conveniently handled, the lighter will be the bread. Much kneading is detrimental.

The largest quantity of flour that can be conveniently mixed at one time is about 12 lbs.; where more is required, it is better accomplished by mixing it separately.

It requires a hotter oven and more time to bake than fermented bread does.

The advantages to be derived from this process are important. In all climates and under all circumstances it may be adopted; and by it is entirely obviated all difficulty of procuring yeast or ferment, which is frequently of an inferior quality, vitiating the bread, and rendering it more or less unwholesome.

The bread being free of all yeasty particles, is more digestible, and not so liable to create flatulence, or turn acid on weak stomachs, as fermented bread is apt to do, even when of the finest quality.

It is a great saving of time, trouble, and litter, and may be employed at all seasons of the year, without reference to temperature or atmospheric variations.

Economically, yeast may possibly have the advantage when plentiful and good; but when scarce and bad, a common state of things during the summer months, particularly in remote districts, the saving of time, trouble, and risk, is invaluable. Where much bread is made for a family, as at some farm-houses, by purchasing the materials in large quantities, a considerable saving may be effected.—*Pharmaceutical Trans.*, No. 9.

13. *Phloridine*.—This is a new medicine, which is now very highly spoken of by French practitioners as a useful adjunct to our cinchona preparations. It has been used for some years in Germany, Poland, and France. It is extracted from the bark of the roots of the apple-tree and the wild cherry-tree, and is thus prepared: the bark of recent roots is boiled with water sufficient to cover them, for half an hour. This is poured off, and the same quantity is again used; these two fluids are mixed together, and at the end of six hours deposit the phloridine in the form of a deep-red velvety-looking matter.

M. Lebaudy, the editor of the *Journal des Connaissances Médico-Chirurgicales*, says, "its efficacy is so decided, that we cannot hesitate to class it with the most powerful febrifuges; and it has this advantage over quinine, that it never induces gastralgia."—*Braithwaite's Retrospect*, No. 5.

14. *Quinine found in the Urine and in the Blood*.—On examining the sediment formed in the urine of a patient to whom quinine had been administered, on account of periodical nervous pains, M. Landerer found, besides the phosphate and urate of lime, and carbonate of ammonia, a small quantity of quinine in a free state. The urine itself contained sulphate and hydrochlorate of ammonia, and also some traces of quinine. In two other patients to whom quinine had been administered for the cure of intermittent fevers, M. Landerer endeavoured to discover this alkaloid substance in the blood. One was bled for a pleurisy which supervened; the blood was inflammatory, and the coagulum covered with a thick buffy coat. When first drawn from the vessel, and so long as it preserved its heat, it had but a very slightly bitter taste; but after it had become cold, and the formation of the clot had taken place, the bitterness was very marked. A perceptible difference was discernible between the serum and the coagulated portion, the bitter taste being most marked in the former, and the quinine could be obtained from it by evaporation; then digesting the residue in acidulated water, filtering, and precipitating it by ammonia. In the second patient the analysis of the serum gave exactly similar results. *London Med. Gaz.* July 1842, from *Repertorium für die Pharmacie*.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

15. *Hypertrophy of the Brain in Children.*—Mr. CATHCART LEES relates, in the *Dublin Journal of Medical Science* for September last, three cases of this occurring in his own practice, and presents some interesting remarks as to the diagnosis of that condition.

We subjoin the cases with his general conclusions.

"CASE I.—John Harding, aged two years, a full, heavy-looking child, was admitted into the hospital in May, 1842, for pertussis; his mother states that he has always been healthy, but very *heavy* and *drowsy*, not playful like her other children; his appetite has always been *great*. The head is rather larger than it ought to be in proportion to his age, particularly across the parietal protuberances, which form considerable projections; the frontal bone also projects over the root of the nose; fontanelles perfectly ossified; his eyes are large, prominent, and widely set; the intelligence is perfect, but he appears to be very *apathetic*, and does not mind any object attentively but his food, for which he is very greedy; he is easily made to cry; there was no fever on him, but the paroxysms of the cough were very violent, and frequently succeeded by convulsions, which were general, and in one of which he died on the sixth day of his disease.

"On removing the calvarium, the dura mater appeared to be tense, and on dividing it, the cerebrum appeared swollen, and protruded through the membranes; the convolutions appeared to be flattened as if compressed; the vessels of the pia mater were injected with very red blood; the substance of the brain was much congested, but of a firm consistence and very large; there was no serous effusion into the ventricles; there was a slight vascularity of bronchial mucous membrane; the bronchial glands were not enlarged; the larynx was perfectly healthy; there were a very few dark, firm spots, like the dots in pulmonary apoplexy, scattered through the lungs, and quite isolated; all the nerves were carefully dissected, and presented nothing abnormal.

"CASE II.—Ann Murphy, aged three, a very delicate looking child, with the head large in proportion to the body, which is emaciated, particularly the lower extremities; the abdomen is tumid; there is considerable projection of the frontal bone, as also of the posterior angles of both parietal bones; the eyes are heavy, and widely set, so as to give the child the face of one with chronic hydrocephalus; the fontanelles are quite closed and firm, but cartilaginous; she is very cross and greedy, crying whenever she sees food, till she gets it, when she falls asleep over it; in fact she spends her time in crying, eating, and sleeping. Her intellect is obtuse, but appears to be perfect; the pulse was generally regular, and her pupils natural. She had been left at the gate of the hospital, so we did not know her previous history, but she remained some months under my observation previous to her death, which took place gradually from chronic diarrhœa, without convulsions.

"The brain weighed two pounds three ounces; the dura mater was firmly adherent to the cranium; the brain was large, the dura mater being rather tense over it; the substance of the brain was firmer than is natural in a child of that age, and also of a paler appearance; there was not any fluid in the ventricles nor at the base of the brain; in fact, it appeared to be nearly void of either blood or serum; there were not any tubercles in either the lungs or abdomen.*

* "It is very difficult to ascertain with any degree of accuracy, the average weight of the healthy brain at different periods of life, and still more, the weight of it in various diseases, as it must be always open to a source of fallacy, resulting from other causes, as the amount of congestion, fluid, and the results of disease; thus, Dr. Sims has given a table containing the weight of 253 brains in different diseases, and then states that the weight of the brain cannot be fixed by any means, however accurate, which is further proved by several cases given by him, in which the brain was found unusually large and heavy from various causes, but which did not constitute hypertrophy.

"CASE III.—Mary L., aged seven, light brown hair, delicate skin, appears as if she is always dropping asleep; her pupils are natural; pulse regular; her functions are well performed; her temper is very bad; she will not learn her lessons, but this appears to depend more upon indolence than stupidity; her appetite is very great; her head is not too large in proportion to her body, but there is considerable projection across the parietal protuberances; she complains frequently of headache, and sometimes vomits in the morning. I was consulted on July 10, 1842, for a strumous swelling in the neck of this child, and was so struck by her appearance, that I inquired particularly into her history.

"I have placed these cases in apposition, in order that we may compare them with regard to their early symptoms, as I think they are chiefly valuable from their accurate previous history, for in none of the cases which have been hitherto published, has there been any stress laid on this point, which, however, is of paramount importance. In the cases related by Andral, headache, convulsions, and epilepsy, appear to have occurred, but they only came under his observation in the second, or acute stage of this state, when the brain was suffering from compression, as in his cases the dimensions of the cranium were not larger than natural, which must cause a great difference in the symptoms. Thus idiocy, which depends so frequently on atrophy of the brain, may be caused by hypertrophy, if there be much compression, whereas, if the cranium be developed in the same ratio with the brain, there are often no symptoms produced, or but slight ones, as in a case related by M. Scoutteten,* where a child of five years old was affected with hypertrophy of the brain (with enlargement of the skull) to such a degree, that the head became as large as that of an adult, particularly prominent at the occipital protuberances; the cerebral functions were undisturbed, and the only phenomena which the child presented during life were the frequent fallings occasioned by the weight of the head, which was carried forward whenever the child wished to run, and a great tendency to sleep when he remained quiet. He died of acute enteritis, and the brain exhibited a great development of all its parts, with only a small quantity of reddish serum in the ventricles.

"Let us now classify the symptoms which the above cases presented, and see how far they may assist us in establishing a diagnosis.

"First, with regard to intelligence.

"There was a peculiar *obtuseness of intellect*, characterised chiefly by *apathy* to external objects, and a great tendency to drowsiness. There also was evinced a *peculiar irritability* of temper.

"Andral states, that in adults, headache, with severe exacerbations, is a prominent symptom; this also occurred in the last case detailed by me. He also mentions weakness of the limbs, often ending in paralysis, convulsion, epilepsy; but these symptoms belong to the second period of this state, when it has passed into the acute stage; but as it is an essential feature of every hypertrophy to develop itself slowly, I have only had an opportunity of studying this state in the first or chronic period, as the two first children died of other diseases before they had reached the second period, which most probably would occur about the second dentition; thus in observation 4th of Andral, the boy became epileptic at the age of seven years, and died comatose, after a fit, at nine years old.

"The *appetite was very great* in all the cases which I have noted, and there existed the *peculiar projection of the parietal protuberances*, on which Dr. Munchmeyer particularly insists, and which, I think, may prove a valuable guide in aiding to discriminate this state from chronic hydrocephalus, with which disease it is most frequently confounded. Thus, in the first case related by Dr. Sims, the mother of the child informed him that they had wished to tap the head at one of the hospitals. And Dr. Hennis Green,† in an excellent article on this subject, states that he recently had seen a child who had been condemned to death by a medical man, as having water on the brain, but which was a case of

* Archives Generales, vol. vii.

† Provincial Medical and Surgical Journal.

simple hypertrophy, and which did not interfere with the health of the child. The diagnostic sign which he gives, is the sensation of firmness communicated to the finger, on pressure being made over the fontanelles, in cases of hypertrophy, as contrasted with the fluctuating feel in cases of chronic hydrocephalus; but this could not apply in cases of very young children, or in extreme cases.

"The prognosis in children is not necessarily unfavourable, for as it is rather an error of development than an actual disease, there is a natural tendency to return to the normal state; the chief danger, in fact, arising from the occurrences of other diseases, as those attendant on dentition, the exanthemata."

16. *Empyema terminating favourably by spontaneous opening*.—SAMUEL SHORTRIDGE, Esq. records in the *Edinb. Medical and Surgical Journal* for October last, an exceedingly interesting case, illustrative of the manner which nature often adopts for effecting a cure in cases of pleurisy terminating in empyema.

The subject of this case was a man of a stout, robust appearance, who presented the usual symptoms of acute inflammatory fever, accompanied with cough, dyspnoea, and a fixed pain near to the inferior border of the left scapula, extending across the posterior surface of the chest.

On the 3d of October, 1838, while engaged in raising a heavy piece of timber, "he felt something give a crack" in the foregoing position, which, however, did not prevent him continuing his employment during the entire day; but on the following day, while rowing a boat, he became chilly and squeamish, and was forced to bed, when the above symptoms made their appearance.

Mr. S. saw him on the 5th of October, and took blood to syncope, and prescribed an antimonial saline mixture, some powders containing calomel and antimonial powder, and applied a sinapism to the painful part.

On the following day, there being no improvement, the blood-letting was repeated, a large blister was applied, and the medicine continued. The sputa, which now became more copious, from its rusty character, and the ordinary stethoscopic indications, enabled me to consider the inflammatory action to have extended to the substance of the lung. The usual antiphlogistic measures were continued; blisters repeated from time to time; and in the course of a few days, the acute febrile symptoms subsided; but there still remained the fixed pain near the scapula, frequent cough, copious expectoration, and a total inability to lie upon the right side, any attempt at which greatly aggravated the cough and dyspnoea. Very little benefit was derived from the treatment adopted; colliquative perspirations were superadded, to ameliorate which, mineral acid and quinine were had recourse to.

Towards the end of December, debility and emaciation had advanced progressively, and a fulness was observed over the left side of the chest, although no difference in its capacity was found upon measurement; percussion on the part elicited a dull sound; and the respiratory murmur was very faint, although audible over the subclavian region; and a few days after, a soft tumour appeared on the fifth intercostal space, an inch below, and to the outside of the left nipple.

The next day Mr. S. found that the surface of the tumour had ulcerated, and the patient lay bathed in purulent matter, the bed and clothes being fully saturated with it. The purulent matter continued to flow daily from the aperture, and some came afterwards by the mouth. The patient was afterwards kept comfortable by evacuating the purulent matter night and morning to the extent of a pint, which was facilitated by turning him to the left side, and requesting a full inspiration and a cough to be made, when a soft pledget with a quantity of tow and a bandage was applied.

The cough and dyspnoea were now greatly relieved; a generous diet, with porter, together with the acid and quinine, were prescribed, under which he gradually regained so much strength as allowed him to go out of doors by March, 1839, and henceforward he continued still so weakly as only to be able to walk a very short distance, while the purulent matter was continued to be evacuated night and morning, in nearly the same quantities as at first, by removing the bandages, &c. until three weeks ago, when blood appeared instead of purulent matter, and the

wound thereafter closed, leaving a flattened, thimble-like cavity, into which the point of the finger could be introduced; and he has since progressed in strength.

Upon examination, the movements of both sides of the chest are equable, and the respiratory murmur natural, as also the sound elicited by percussion.

The successful result of this case may, perhaps, be regarded as a support to the practice generally adopted, of gradually evacuating such collections, as it is very probable that only as much purulent matter flowed in the first instance as reduced it to the level of the aperture.

17. *Cirrhosis of the Lung*.—Dr. STOKES exhibited to the Pathological Society of Dublin a specimen of that disease of the lung, first described by Dr. Corrigan, under the title of cirrhosis of the lung. Its general characters are, a tendency to consolidation or contraction of the pulmonic tissue, with dilatation of the bronchial tubes. Dr. Stokes' patient had been labouring for months under cough, with dyspnoea and hectic fever, and died two days after her admission into the hospital. The physical signs were dulness of sound on percussion over the upper part of both lungs, but no decided or unequivocal signs of cavities. The appearance of the lungs on dissection was very characteristic; the left, which was the more diseased, was greatly diminished in size, and very irregular on its surface, so that when the hand was passed over it numerous small bodies could be felt, conveying to the fingers the impression of tubercles existing on the surface of the organ; this was produced by the presence of air vesicles. On making a longitudinal section of the trachea and primary divisions of the bronchi, the right bronchus, immediately after it branched off from the trachea, became greatly dilated, so as to exceed the latter in diameter, while the left bronchus was evidently contracted and reduced below its ordinary calibre, but dilated again a little further down.

At a subsequent meeting, Dr. Greene exhibited another specimen of pulmonary cirrhosis, with dilated bronchial tubes, closely resembling phthisical cavities, taken from a woman who had long suffered from intractable cough, and who was affected with a train of symptoms closely resembling phthisis. The physical signs were, cavernous respiration and distinct pectoriloquy in the right infra-clavicular space; the latter sign was also found at the inferior angle of the scapula, and in the right axilla; distinct gargouillement, with bronchial respiration could be heard in various parts of the chest. The left lung presented the signs of bronchitis. The lung, on examination after death, was found to be diminished in size and indurated; the cavities formed by the dilatation of the tubes were of considerable size, and did not contain purulent matter; they were largest near the surface of the lung, and towards its upper part. Their cartilaginous structure could be distinctly traced. There was not any sign of tubercular deposition in either lung. The pleura was greatly thickened, and the diaphragm was adherent to the liver.

Lænnec attributed this complaint to constant cough, and accumulation of mucus in the bronchial tubes. His opinion is, however, liable to objection, and his account of the causes to which the dilatation is owing is not sufficient to explain all the phenomena. According to Dr. Corrigan, the primary seat of the disease is in the web of cellular tissue which constitutes the matrix of the lung, which has a tendency to contract, so as to produce, when the disease is advanced, a very considerable obliteration of the air-cells. He thinks the diminution of the lung the first step in the disease, of which the dilatation of the bronchi is a consequence.—*Prov. Med. Journ.* Aug. 13, 1842, from *Dublin Medical Journ.* May 1842.

18. *Microscopical characters of the sputa in Phthisical Patients*.—M. SANDRAS read before the Academy of Medicine of Paris, August 30th, a memoir on this subject. He selected from the Hotel-Dieu, patients in whom phthisis was well marked; after having collected their sputa in a small tube, he submitted them to a microscope of 300 diameters, and he believes that his experiments will confirm the already existing opinion, that the expectoration of consumptive people

is quite different from that given off by the lungs in other diseases, and that they show further, that this mode of examination will materially assist the diagnosis of this disease, formed by the stethoscope. He found that the expectoration consisted of numerous round globules, separated from each other, of a greyish white colour, and similar in size and form to the globules of pus, but differing from them in this respect, that the latter are circumscribed, while the former are surrounded by a kind of rough layer, which it is impossible to remove by washing. They are also opaque in the centre, and become gradually clearer as we approach their border. The above data were drawn from 49 patients; but he observes at the same time, that the sputa of all phthisical subjects do not present a similar appearance,—a circumstance which can be easily accounted for, when we consider that invalids are in general affected at the same time with bronchitis. M. Sandras was unable to discover the globules above described, in tuberculous abscesses in other parts of the body. On examining the expectoration from simple catarrh, it was found to be apparently similar in appearance, having small corpuscles, but no globules; these were not isolated from each other, were not all of a like size, disappeared or only appeared in an indistinct manner under the microscope, and their surface was frequently striated. Notwithstanding these striking differences, cases are occasionally met with, in which it is very difficult to decide whether the disease is phthisis or bronchitis. M. S. does not think that the pus comes from the tubercular matter itself, but from the secretion in the centre of which the tubercle is placed; nevertheless, the signs afforded by it are not of less importance in the diagnosis of the disease.—*L. & E. Monthly J. Med. Sc.* Oct. 1842.

19. *Treatment of the Hemorrhagic Diathesis.*—The London and Edinburgh Monthly Journal of Medical Science for July last contains an exceedingly interesting paper on this subject, read before the Medico-Chirurgical Society of Edinburgh, by JAMES MILLER, the successor of Sir Charles Bell, in the Surgical chair of the University of Edinburgh.

To constitute the hemorrhagic diathesis, we have not only, Mr. Miller observes, the blood flowing through dilated and non-contractile tubes, but sent thither in greater volume than in ordinary and healthy circumstances, thinner and more fluent than in health, and little if at all able to arrest its own course by assuming the solid form. In addition, the capillary tunics are not only thin, but weak, and easily lacerable; a slight bruise produces serious ecchymosis; coughing may induce hæmoptysis; a sneeze brings on epistaxis; diarrhœa occasions copious evacuations of blood by the rectum; and extravasations are not unlikely to follow but slight causes within internal cavities. The whole circulating system, besides, is usually in an irritable and excited condition; the pulse being considerably above the healthy standard, and the heart acting with unusual force and sharpness. Not unfrequently, a febrile condition at the same time exists; and when it does exist, it increases the intensity of the diathesis.

In the treatment of the hemorrhagic diathesis, Mr. M. directs attention to the following points:—1. *Energetic treatment at the outset*, for then only have we the blood favourable for coagulation, and the parts tolerant of pressure. 2. *The propriety of internal remedies*—astringents, sedatives, nauseants, and hydragogues—to obviate, if possible, the morbid condition of the blood; and administered either by the mouth or anus, according to circumstances. 3. *Abandonment of escharotics*—especially of the actual cautery, being at the best only occasionally and temporarily beneficial, and ultimately highly pernicious. 4. *Pressure*, preceded by a styptic, early, accurately, uniformly, and yet moderately applied, the best local means of treatment. 5. *Irritants and cupping*, at some distance from the bleeding point, not unlikely to prove beneficial; the former by creating an inflammation in a comparatively unimportant part, and thereby increasing the amount of fibrin in the general mass of blood; the latter by averting the sanguineous determination to the source of hemorrhage. 6. *Careful avoidance of simply febrile accession*, which would have the effect of exciting the circulation, at the same time diminishing still further the amount of fibrin. 7. *Patient persistence*

in the foregoing system, without abrupt or frequent change of remedies. 8. In protracted cases, *nutritious, yet non-stimulant diet*. 9. Failing ordinary means, *transfusion* is to be attempted. 10. The question of *prophylaxis*, not irrational; the tendency being once known, its removal ought at least to be attempted.

20. *Very simple mode of arresting Epistaxis*.—M. NEGRIER, of Angers, states that the following simple plan almost invariably succeeds in arresting bleeding from the nose:—The child is made to stand erect, with the head elevated. The nostril from which the blood flows is compressed by means of the fingers, and the corresponding arm is directed to be raised perpendicularly, and be retained in that position for about two minutes. The hemorrhage in general was arrested in ten seconds from the moment of raising the arm. Dr. Negrier has met with eleven cases of epistaxis, five of which he details, which were cured by this simple means; and he states, that, whether the hemorrhagy was due to a general plethora, or to a temporary congestion of blood in the head, the sudden elevation of the arm corresponding to the nostril from which the blood flowed almost always suspended the bleeding. Two or three times only he has seen the epistaxis return; but it always ceased on the elevation of the arm. It never, however, returned if the person had lost six to nine ounces of blood before the treatment was had recourse to.

One case is related where a bleeding, resulting from a slight incision of the skin of the upper lip, was arrested by the same simple means. This case was the more remarkable, as the bleeding would not stop, though the wound was covered by court-plaster, and freely cauterized with the solid nitrate of silver. On raising the two arms perpendicularly, the bleeding was arrested on the instant, but restored as soon as they were lowered; but on maintaining them in the perpendicular position for about a couple of minutes, the bleeding was definitively arrested.—*Ed. Med. and Surg. Journ.*, October, 1842, from *Archives Generales*, June, 1842.

21. *Prevention of sore nipples*.—MR. MARCUS recommends as a means of preventing sore nipples, washing these parts and also a great portion of the mamma, three times a day, commencing from the sixth month of pregnancy, with tar water.—*Journ. des Connais. Méd. Prat.*, Feb. 1842.

22. *Deafness cured by the endermic use of Morphia*.—DR. HOEBEKE relates in the *Archives de Med. Belge*, the following case of deafness, the cure of which he ascribes to the endermic use of morphia. A lady had become so deaf after an attack of fever that she could not distinguish a word, unless it was bawled into her ear by applying the mouth close to it. But along with the deafness there was always an incessant noise in the ears—at one time like the hissing of boiling water; at other times like the roaring of a hundred voices together—which was often so distressing as to cause headache and confusion of ideas:—these feelings were always worse when the head was on the pillow. There was a quantity of wax in the ears; but no relief was obtained when it was removed. Nothing irregular could be perceived either in the ears themselves or in the throat. Leeches were applied behind the ears, and emetics and purgatives given; but no relief followed. Supposing that the symptoms might be dependent upon some anomalous state of the nervous apparatus, a blister was applied behind each ear, and the excoriated surface was sprinkled with half a grain of sulphate of morphia. By the next day the noise and deafness on the left side had quite ceased, and on the right were much abated:—the headache, too, had disappeared.

As the unpleasant feelings still continued on the right side, a second blister was applied and treated in the same manner as before, with morphia:—the success was decided, and the patient was quite freed of all his annoyances.

[We opine the blistering had quite as much to do with the cure as the morphia.]

23. *Typhus Fever in an Old Woman*.—M. RAYER exhibited to the Academy of

Medicine of Paris, August 30, a preparation of the morbid degeneration to which the glands of the small intestines are subject in typhus fever, as it occurs in Paris; and he prefaced the remarks on his case by saying, that some years ago, M. Chomel had declared, that he was not aware of a single authentic case of typhus fever having been met with in a person above the age of fifty-five. Since that period, M. Prus had reported an instance of a person seventy-four years of age, who was affected with that disease; and the individual from whom he obtained the specimens at present on the table, was fifty years of age when attacked.—*Lond. & Ed. Month. Journ.*, Oct. 1842.

24. *Aphthæ of the Neck of the Uterus*.—M. COUTE asserts, in a memoir read to the Academy of Sciences, 19th Sept. last, that aphthæ of the neck of the uterus, though not described by writers, is a very frequent affection.

25. *On Percussion*.—By JOHN HUGHES BENNETT. Mediate percussion as employed by M. Piorry, is undoubtedly a more valuable means of diagnosis than is generally allowed. His experience, it is said, enables him to "map out, as it were, on the surface of the skin, with ink, the size and form of the heart, arch of the aorta, liver, spleen, kidney, &c.; and indicate to the eighth of an inch, the exact height of pleuritic effusion, or the margin of circumscribed pneumonic dulness." At first sight this partakes too much of the marvellous, but when we know the length of time he takes to percuss a single patient, (half an hour,) we may suppose him to be a more expert operator than the generality of practitioners. The instruments he uses are, 1st. *The Hammer*: the head of which is made of steel, brass, or iron; a capsule is screwed to the end with a projecting disc of caoutchouc; the handle is made of wood, with depressions for the fingers and thumb. The head of the handle is not placed exactly at right angles with the handle, but has a slight obliquity upwards. "This is necessary, because in employing it the handle is almost certain to be somewhat elevated, and this slight obliquity even then allows the practitioner to strike the pleximeter perpendicularly." 2d. *The Pleximeter*: made of ivory, wood, or metal, with a handle at each extremity, to enable the practitioner to take hold of it more readily.

General rules to be followed in the practice of Mediate Percussion.—1. The pleximeter should be held by the projecting handles between the thumb and index finger of the left hand, and pressed firmly down upon the organ to be percussed. Much depends upon this rule being followed, as the sound and sense of resistance are considerably modified according to the pressure made by the pleximeter. A very easy experiment will prove this. If, for instance, the pleximeter be struck while it rests lightly on the abdomen over the umbilicus, and again, when it is pressed firmly down amongst the viscera, the change in tone will be at once perceived. In the first case a sound is produced, from the muscles and integuments being alone influenced by the force of the blow; in the second case, a clear tympanitic sound is occasioned from the vibration of the walls of the intestine. In every instance, therefore, the pleximeter should be so held and pressed down, as to render it, so to speak, a part of the organ we wish to percuss.

2. Care must be taken to strike the pleximeter fairly and perpendicularly. Unless this be done, vibrations are communicated to textures in the neighbourhood of the organ to be percussed, and fallacious results are the consequence. If, in percussing the lungs, for example, the blow be made obliquely, we obtain the dull sound produced by the rib, and I have seen considerable error in the diagnosis thus occasioned.

3. A strong or gentle stroke with the hammer will modify the tone and sense of resistance, inasmuch as the impulse may be communicated by one or the other to a deep-seated or a superficial organ. Thus a gentle stroke will elicit a pulmonic tympanitic sound just below the fourth rib, where a thin layer of lung covers the liver, but a strong one will cause a jecoral parenchymatous sound. At the inferior margin of the liver, on the other hand, where a thin layer of the

organ covers the intestines, the reverse of this takes place, a gentle stroke occasioning a dull, and a strong one a clear sound.

4. By withdrawing the hammer immediately after the blow, we are better able to judge of the sound; by allowing it to remain a moment, we can judge better of the sense of resistance.

5. The integuments should not be stretched over the part percussed, as when the stethoscope is employed, for an unnatural degree of resistance is thus communicated to the hand of the operator from the muscular tension. In every case, especially where the abdomen is examined, the integuments and superficial muscles should be rendered as flaccid as possible.

6. It is always best to percuss on the naked skin. It is not absolutely essential, however, and in cases where, from motives of delicacy, it is desirable that the chest or abdomen be not exposed, it only becomes necessary that the covering of linen or flannel be of equal thickness throughout, and not thrown into folds.

Special rules to be followed in percussing the chest.—Percussion of the lungs generally bears reference to a change in density, which is only to be detected by comparing the healthy with the morbid portions. The great practical rule here to be followed, is to apply the pleximeter to both sides of the chest in succession, with the same firmness, exactly in the same situation, and let the blow with the hammer be given with the same force. Care must be taken that the position of both arms be alike, as the contraction of the pectoral muscles on one side more than on the other may induce error. In short, every circumstance must be the same before it is possible to determine in delicate cases, either from the tone or sense of resistance, whether change of density exist in the lungs. When circumscribed alterations are discovered in the pulmonary tissue, their limits may be marked out on the surface of the skin, in the manner previously indicated. In this way, I have frequently succeeded in determining with accuracy the size and form of circumscribed indurations, arising from partial pneumonia and pulmonary apoplexy. Under the clavicles, the pleximeter must be applied with great firmness. Inferiorly, a thin layer of lung lies over the superior surface of the liver; and to determine the exact place where its inferior border terminates, the blows with the hammer should be very slight. Posteriorly, also, the pleximeter must be firmly applied, and the force of the blows considerable: but they should decrease in force inferiorly, where a thin layer of lung descends over the liver much deeper than anteriorly.

In a healthy state, a distinct difference may be observed in the sonority of the lungs immediately after a full expiration and a full inspiration. This does not take place when the tissue becomes indurated from any cause; and thus we are furnished with a valuable diagnostic sign. Congestion of the lung, and pneumonia in its first stage, causes only slight dulness and increased resistance, which, however, are readily detected by the practised percussor. In the second and third stage of pneumonia, and in apoplexy of the lung, this dulness and resistance are well marked, and even an impression of hardness and solidity communicated to the hand. When, however, the lung is studded with tubercles, the induration is most intense, and the greatest degree of resistance communicated.

Partial induration from pneumonia, apoplexy, or tubercular deposition, may be detected by percussion, even when deep-seated and covered by healthy portions of the lungs. In this case, by pressing with the pleximeter, and striking lightly, a tympanitic sound is only heard; but by pressing the pleximeter down firmly, and striking with force, the dull sound may be elicited and circumscribed. When induration, however, exists inferiorly in those portions of the lungs which overlap the liver, it requires great practice to detect them with certainty. Cavens in the lungs, when large and filled with air, induce a tympanitic sound; but they are generally more or less full of viscous and fluid matters, and give rise to dulness.

Two or three ounces of fluid may be detected in the pleural cavity, by causing the patient to sit up. It is readily distinguished posteriorly, from the dulness

of the liver on the right side; on the left, however, the limit between it and the spleen is not so well marked. The height or level of the fluid is readily determined, and should be marked daily by a line made with nitrate of silver. If the effusion be only on one side, the peculiar humoral dulness is more easily detected. It disappears on placing the patient in such a position as will cause the fluid to accumulate in another part of the pleural cavity, when the space, which was previously dull, becomes clear. When the effusion entirely fills the pleural cavity, no limit of course can be detected; but, even then, the dulness is distinguished from that of the liver by the diminished feeling of resistance.

When air is effused into the pleura, the sound is like that of a drum, and readily detected.—*Braithwaite's Retrospect from Lond. & Edin. Monthly Journ. of Med. Sci.* Feb. 1842.

SURGERY.

26. *Injury to the Elbow-joint in Children.*—Mr. SYLVESTER communicated to the Reading Pathological Society a brief sketch of four cases of injury to the elbow-joint, occurring in children generally under four years of age, of relaxed and strumous habits, resulting, he thought, from partial dislocation of the radius, and caused by lifting the child by the wrists, or catching it by the arms when falling. The displacement was easily reduced, and as easily recurred.—Dr. COWAN's *Retrospective Address in Prov. Med. Journ.*, 13 Aug. 1842.

Sprains and partial dislocation of the shoulder and elbow-joints from careless handling of children are not of very rare occurrence. We have seen several examples of these accidents. Fractures of the forearm occur from the same causes. We were called to a child some years since, whose radius was fractured by her mother in helping her over a gutter.

27. *Operation for enlarged Patellar Bursa.*—Dr. HARGRAVE of Dublin, performed the following operation on a healthy housemaid, 21 years of age, admitted into the city of Dublin Hospital, with enlarged patellar bursa.

June 8th, 1841.—“An incision to the extent of one-eighth of an inch, was made along the outer margin of the tumour; then a very small bistoury was introduced obliquely into the cyst, at such a distance from the superficial cutaneous incision as prevented the escape of the fluid.

“The sac was then cut in several places, chiefly on the anterior surface, and the instrument withdrawn, all the fluid having been evacuated.

“A small compress was then applied, and several straps of adhesive plaster, and a roller which extended from the toes to the knee.

“A splint was also applied, which extended from the middle of the back part of the thigh to the same point of the leg.

“10th. Dressings were removed; considerable diminution in size of swelling.

“Straps of adhesive plaster were again applied nearly in the same way as that recommended by Baynton.—No constitutional disturbance.

“14th. Straps quite loose. A strong evidence of subsidence of swelling.

“17th. Natural appearance of the joint nearly restored.

“Discharged at her own request, but strictly cautioned against returning to her usual employment for some time.

“If the incision, or rather puncture into the sac,” Dr. Hargrave says, “be made with care, the internal surface of the cyst then cautiously scored after it, the fluid evacuated by firm pressure, so as to prevent the ingress of air into the cavity, no danger need be apprehended of unpleasant effects succeeding to this measure.” “The only instances,” he adds, “in which the subcutaneous incision might fail, are those where the sac is much thickened, its interior loculated, and the cells filled with a thick gelatiniform substance: still in such instances, it is a means which should be kept in view.”—*Dublin Med. Press*, Oct. 26, 1842.

28. *New Remedy for Scalds and Burns.*—Mr. WM. REIND recommends as a remedy for burns and scalds, a solution of gum arabic, repeated coats of it being applied, so as to form a complete covering to the injured parts. He relates several cases in which he tried it, and states that in all relief was procured in a very short time. The more recent the case, however, the more speedy was the removal of the pain. In those cases where blisters had appeared they were opened, and the solution applied; very frequently the application of the solution prevented the effusion of more serum; in some cases, however, serum was again effused and again evacuated.

In those distressing cases of the extensive burning of the bodies of young children, Mr. R. states that he would not hesitate applying the solution over the whole body, at about the warmth of 96° . It does not cool down the system (he remarks) by sudden evaporation or sudden abstraction of heat, like a common cold fluid, a circumstance in most cases to be dreaded, for gum is a bad conductor of heat; neither does it preclude an exposure to moderately cool air, which seems to keep down the excessive irritation consequent upon extensive scalding of the skin.

As it is of consequence to have the solution prepared instantly, the powdered gum, if it can be procured, may be in a few minutes dissolved in warm water. If this is not ready prepared, the common gum in small particles roughly pounded, will very soon dissolve, and the application in any case may be applied at a temperature of 96° or 100° , although in general it is more soothing when applied colder. Rancid gum solution should not be used, as it in this state has lost its adhesive quality. Two, three, or four applications may be necessary at intervals of five or ten minutes. The skin should be previously freed of all oily matters, and the first coating, in order that it may be insinuated closely into the furrowed surfaces of the skin, should be rather thinner than the subsequent ones. In order to produce the proper effect it should form a varnished coat of some thickness and closeness over the whole space of the burnt part.—*Edinburgh Med. and Surg. Journ.* Oct. 1842.

29. *Luxation of the Femur in a Child three years of age.*—An interesting example of this is recorded by Mr. J. KIRBY, in the *Dublin Med. Press.* Oct. 26, 1842. The accident occurred in the following manner:—"The child was in the lap of a servant who was sitting on an outside jaunting car; alarmed at the falling of the horse, she threw herself off, and pulled her charge with violence to the ground. He struck upon the external condyle of the left knee, where both abrasion of the skin and some contusion were perceptible. When taken up, it was observed that he was quite lame, but there was no complaint of pain in the affected articulation. Next day he was visited by the family physician, Doctor Robert O'Brien, who, finding no evidence of fracture, attributed the awkward position of the limb to restraint, produced by contusion, and he directed his treatment in accordance with that opinion. The following day he was attracted by increased deformity, and now he began to suspect articular injury, the character of which indicated the presence of luxation, while the years of the patient cautioned him neither to express such an opinion, nor to act upon it without having the advantage of further advice. Under these circumstances my assistance was required on the third day. I found the boy in bed, leaning to the affected side, free from pain, and quite playful, with a shortened limb, inverted knee and foot, and swollen buttock. He was removed to a table, and placed in a standing attitude, without exhibiting any evidence of suffering. The hip and gluteal region strongly resembled the advanced stage of morbus coxæ when the extremity becomes shortened and abscess exists around the joint, so considerable and uniform was the convexity. The femur was somewhat inclined forward by which the groin seemed sharply indented. The knee lay upon the other in a plane above the patella, while the extended foot, much inverted, rested on the inner front of the leg above the internal malleolus. The leg was slightly bent. The limb was shortened about two inches and a half. The cast of the spinal column was towards the distorted member.

"To favour a more critical examination, the child was laid on his back, the

shoulders being squared by his father, while Dr. O'Brien disposed the pelvis, so as to correspond with their direction. To ascertain how far elongation could be accomplished, I grasped the ancles with my left hand, my right finger being placed on the hip to observe trochanteric changes. During a gentle act of extension, in which I turned the foot directly forward, my fingers maintaining a scrutinizing pressure on the hip-joint, where a solid fulness existed, I felt an obscure rubbing motion, which terminated in a sudden snap distinctly sensible to the bystanders. The extremity was instantly restored to its natural length and form. The inguinal fold and gluteal prominency at the same time disappeared, nor did they return when every opposition was removed."

Three months had elapsed when the report was written, and the articulation was free from the consequences which might be supposed to ensue from such a serious violence.

"Those who reason," Mr. K. observes, "from the anatomical structure of the hip-joint at so early a period, may be disposed to deny the possibility of dislocation, and may surmise that the reputed accident was one of separated epiphysis, or of fracture of the femur in a high situation. But the discordance of symptoms, with either supposition, taken together with the friction, snapping sound, immediate restoration to natural position and form, with the consequent rapid recovery, must strongly oppose the entertainment of such an opinion.

"As liability to such displacement must henceforward be allowed, it may be questioned whether it be not one of no uncommon occurrence, and whether some of the celebrity of certain empirical bone-setters may not be attributable to their address in the management of an accident which regular practitioners are not prepared to encounter by pre-conceived notions of articular non-liability to such a luxation."

30. *Excision of Joints.*—M. Roux thinks that he owes a considerable portion of the success which he has met with in performing this operation, to an important modification adopted by him, since August 1840, namely, in making a T incision by the side of the limb, instead of the H incision usually employed by other surgeons.* This modification renders it more easy to dress the wound without disturbing the limb, or causing it the slightest motion. The elbow is the joint to which this operation is most applicable. The following is the report of six cases of excision of this joint, performed by M. Roux.

No. 1.—Caries of all the bones of the left elbow, in a woman aged 41. Complete success. Re-establishment of all the motions.

No. 2.—White swelling of the right wrist, with abscess, numerous fistulous sinuses. Young man, aged 22. Excision of all the bones entering into the composition of the joint. Very remarkable success.

No. 3.—Excision of left elbow, in a man aged 59, for white swelling, accompanied by abscess, sinuses, enormous fungous growths; success.

No. 4.—Excision of the right humero-cubital articulation, for caries of the three bones. Death 16 days after the operation, from extensive erysipelas.

No. 5. White swelling of the left elbow; excision; complete success, in a man aged 26.

No. 6.—Excision of the right elbow in a man, aged 40, for white swelling. The patient is still in the Hotel Dieu, the wound being not yet quite healed.—*Med. Chirurg. Rev.* Oct. 1842, from *Gaz. Méd. de Paris*.

31. *Excision of the Elbow-joint.*—M. ROBERT presented a woman, aged 26 years, on whom he had practised the operation of excision of the elbow-joint. The disease rendering the operation necessary, was caries of the humero-cubital articulation, following a fall on the elbow. There were several fistulous openings about the olecranon. In the fold of the arm were two deep sinuses penetrating into the joint. The soft parts around were moderately engorged. The

* See No. of this Journal for July, 1841, p. 201, for particulars of this mode of operating.

operation was effected by dividing and reflecting the integuments over the olecranon. The humerus was sawn through immediately above the condyles, the ulna below the coronary process, and the radius just below its articular extremity. The limb was placed in the apparatus of M. Guizot. But little reaction ensued, and the fever and sleeplessness which had previously harassed the patient ceased immediately. Nevertheless, the suppuration continued a long time, it being impossible to approximate the divided ends of the bones, and the wound was not completely cicatrised for 18 months. At the time of observation, two years and three months after the operation, it was interesting to observe the manner in which the movements of the fore-arm was executed.

The limb had regained nearly the same size as that of the opposite side. When it was in repose, and hanging by the side of the thorax, there was perceived between the extremity of the humerus and the bones of the fore-arm, a separation of nearly three fingers' breadth, occupied by a dense, but very flexible tissue, which allowed the fore-arm to move freely in all directions. The limb in this position looked as if impotent or paralyzed. But when the patient attempted to bend the fore-arm, the space comprised between the bones of the arm and fore-arm was effaced by the ascent of the latter, which mounted to obtain a fulcrum from the lower surface of the humerus, and the movement of flexion was then effected, being carried to such an extent that the fore-arm formed a right angle with the arm. The patient could easily carry the hand to the head, or to the opposite shoulder, and could raise tolerably heavy weights, as a chair. The power of pronating the hand existed in a moderate degree. The movements of the fingers were perfectly free. She could grasp, with tolerable force, bodies placed in her hand, and could hold objects of very small size. For several months she had resumed her occupation as a sempstress; she is accustomed to use her needle with the left hand, holding and fixing the work with the right. To avoid the fatigue which would result from long-continued flexion of the fore-arm, she wears, while at work, a small apparatus composed of two pieces of leather, one embracing the upper, the other the fore-arm, which are joined at the fold of the limb.—*Séances de l'Académie des Sciences.*

32. *External Aneurism of the Internal Carotid Artery—Ligature of the artery—fatal.* By JAMES SYME, Professor of Clinical Surgery in the University of Edinburgh.—In the beginning of last April I was requested by Sir William Newbigging to meet him and Dr. Abercrombie in consultation, on the case of a lady about 60 years of age. She was rather tall and very thin, with the general appearance of feebleness inadequate for any sustained exertion. Her complaint was a tumour of the throat, in the situation of abscess connected with the tonsil. It was first noticed in the month of November preceding, after more than usual suffering from a dry, hard cough, which had existed with little interruption for five or six years. The swelling, at first very small, gradually increased, and at length occupied the fauces so as to interfere with deglutition, and occasion uneasy feelings of distension by its bulk, which fully equalled that of a large walnut. It was not circumscribed in appearance, presenting, indeed, the diffused aspect of a purulent collection, but when examined by the finger, was felt more distinctly limited than an abscess of the part. At the same time, its contents were found to fluctuate throughout their whole extent, and a strong, uniformly distending pulsation could be perceived over every part of the tumour accessible to touch.

There could be no doubt as to the nature of the case, and as little in regard to the prognosis of its result, if effectual means were not taken to arrest the progress of the disease. It was plain that an aneurism had formed in the course of the internal carotid artery, between its origin from the common trunk, and entrance into the cranium. And it was no less obvious, considering the progressive enlargement that had already occurred, together with the continued excitement from coughing, that the swelling, if permitted to increase, must soon encroach on the pharynx, so as to impede deglutition altogether, or cause suffocation, unless the sac should ulcerate and relieve the patient by hemorrhage at an earlier period of her sufferings. We therefore decided upon recommending that the

common carotid should be tied, and, meeting with no objection on the part of the lady or her friends, agreed to perform the operation on the following day.

In presence of the gentlemen above mentioned, together with Drs. Patrick Newbigging and Mackenzie, I cut down upon the vessel, and tied it with a single silk ligature, just below the crossing of the *omo-hyoideus*; no difficulty whatever was experienced in effecting this; hardly a tea-spoonful of blood escaped, and the patient walked to an adjoining bed-room without appearing to suffer or to have suffered almost any disturbance. During the day she complained of pain in the back of her neck near the occipital region, and struck me as looking even more pale than she had done previously; the pulsation of the tumour still continued, but was much less forcible. In the evening a draught containing gr. xxx of the solution of muriate of morphia was prescribed in the event of restlessness, but not proving requisite, was withheld.

Next morning, about six o'clock, I was informed that the patient had all at once been seized with nearly incessant vomiting and discharge from the bowels. On visiting her, I found all the signs of approaching dissolution, the weakness being extreme, the features bloodless, sunk, and altered in expression, and the pulse small, feeble, and irregular. The evacuation of greenish watery fluid, both upwards and downwards, still continued, though not so frequent as at first. Notwithstanding the use of stimulants, no improvement took place, and she expired about six o'clock in the evening, thirty hours after the operation.

The parts concerned were examined in presence of the gentlemen who had witnessed the operation, with the exception of Dr. Abercrombie, who was otherwise engaged, and with the addition of Mr. Goodsir, who assisted me on the occasion, and afterwards dissected the preparation. The artery was found to be tied just as could have been desired, without any disturbance of the vein, nerves, or neighbouring textures. It was traced upwards to the bifurcation, immediately beyond which the internal carotid dilated into an aneurismal sac. We then opened the head, to ascertain if the disease extended within the cranium, but discovered nothing in the state of the vessels at all abnormal. The lower jaw was next divided, so as to afford free access to the tumour, which, being exposed up to the base of the skull, allowed us to see that the artery, before entering the carotid canal, regained its usual characters. I cut it across there, and detached the whole extent of the vessel down to the root of the neck.

It appears that a crevice, nearly half an inch in length, had been formed through the inner coats in the upper or anterior surface of the internal carotid, about midway between its origin from the common trunk and entrance into the cranium; that the external coat had expanded so as to form the sac of the aneurism, and that the pressure caused by the tumour, which was considerably greater than would seem from the preparation after maceration in spirits, had distorted the course of the vessel, and given it a sigmoid direction. The contents of the sac were coagulated, except at a narrow channel corresponding with the current through the artery, which, it may hence be inferred, had not been completely arrested. Indeed, this was not and could not reasonably be expected, when the free retrograde passage afforded by the anastomosing communications of the external carotid was taken into account.

The result of this case was not less unexpected than distressing. I had frequently tied the carotid for aneurism and hemorrhage, and never met with the slightest bad consequence from the operation. The patient, though thin and fragile-looking, seemed free from any organic disease besides the aneurism, and possessed in a remarkable degree that composed disposition of mind which is so favourable to recovery from injuries. The artery was tied with more than usual facility, and with the most perfect insulation that could be desired. Though doubts might be entertained as to the cure of the disease, through want of sufficient obstruction in the flow of blood, no apprehension was entertained of danger from the operation, and I feel quite unable to offer any satisfactory explanation of its fatal issue.

In a pathological view the case is interesting, from presenting an example of aneurism in a very unusual situation. The branches of the carotid artery within

the cranium occasionally expand into aneurismal sacs, which are apt, by their bursting, to cause sudden death from hemorrhage. But aneurism of the internal carotid artery, exterior to the cranium, does not seem to have been hitherto ascertained and recorded.—*Lond. and Edinb. Monthly Journ. Med. Sci.*, Nov. 1842.

33. *Sudden development of Subcutaneous Tumours.*—The following very curious case of sudden development of subcutaneous tumours, in connection with diseased state of the stomach, was communicated to the Surgical Society of Ireland by Mr. RUMLEY.

"A gentleman, *ætat.* 44, sallow complexion, and dark hair, strong, healthy, and accustomed to active exercise in the open air, was prevented, by peculiar circumstances, from taking his usual exercise, and in order to beguile the time, was in the habit of smoking, sometimes as many as twenty or thirty cigars in the course of one day. After a time he was attacked with pain in the region of the stomach, and occasional vomiting; in the month of September last, the pains increased and extended on the left side to the spine, and from thence to the posterior part of the head—his body and extremities were usually cold—the pains were so severe as to prevent him sleeping; and when he did fall asleep, he awoke unrefreshed, and bathed in perspiration, but free from pain; and he continued free from it until the next night when the same symptoms returned. On removing to the country, a month after the commencement of the attack, the pains subsided, but sleep did not return—emaciation increased—no food remained on his stomach—it was rejected undigested after longer or shorter intervals.

"In the month of January last, his stomach became more settled—the food was no longer rejected—his appetite improved—he began to have good nights, and generally found himself refreshed in the morning. About this period, on brushing his hair, he detected a tumour upon the scalp, which was larger than the perpendicular section of an egg—it was painless, colourless, and without any feeling of fluctuation; similar tumours, to the amount of eight, subsequently developed themselves on other parts of the scalp; within the last month, one has formed over the scapular extremity of the clavicle—they are all unaccompanied by pain. At the present time his appetite is extremely good—he sleeps well—is capable of taking exercise—but he gains flesh very slowly, not having increased half a stone in weight since the severe symptoms subsided."—*Dub. Med. Press*, April 6, 1842.

Two cases are also related by Mr. W. G. DYAS of this same affection, in the *Dublin Medical Press*, April 13, 1842.

"The subject of the first was a man aged about thirty, who had been epileptic for several years, but in whom the epileptic paroxysms became less severe, and appeared at longer intervals, until at length the original disease lapsed, as it were insensibly into, and was superseded by that assemblage of symptoms that we term *hypochondriasis*, the pathology of which is still extremely obscure, though the characteristic phenomena are sufficiently obvious, and evidently connected with a morbidly exalted sensibility of the nervous system, conjoined with diminished energy. In this man the tumours were of various sizes—none of greater magnitude than a large pea, and the smallest about the size of a duck-shot: they appeared almost simultaneously, were moveable, perfectly globular and firm, without any discoloration of the skin, and though they appeared in greatest number in the upper extremities, yet they existed in the subcutaneous tissue of the whole body—they were altogether free from pain, and could be pressed between the finger and thumb without causing any uneasiness. In this case there was some disturbance of the digestive functions, not more, however, than is usually met with in most cases of *hypochondriasis*. The treatment was directed to the removal of the derangement of stomach and bowels, to the restoration of the functions of digestion, and thus indirectly to the restoration of the exhausted energy of the nervous system. With this intent, I prescribed aperients, enjoined a restricted diet, and gentle exercise, ordered tonics with ammonia, and the cold shower-bath. Still these measures were not attended with success. The subject of this case then withdrew himself from my care, and

entered an infirmary in the neighbourhood of his place of residence, where he was at once subjected to a succession of warm baths, which, without removing the tumours, had a most injurious effect on his general health: upon his leaving the hospital I sent him to Dublin, and requested my friend and preceptor, Mr. Carmichael, to take charge of him. After this, I had no opportunity of seeing the man until nearly two years had elapsed, when I accidentally met him, much improved in health; he was then, he said, a stranger to epileptic fits, had no symptoms of hypochondriasis, and the subcutaneous tumours had disappeared. He said that all his complaints had spontaneously gone off, and he seemed to consider himself not much indebted to the profession for his recovery.

The second case is under my care at present, and, extraordinary to say, is also in a hypochondriacal patient. The subject of it is a female aged fifty years. I am treating her on the same principles as those on which I treated the former case; if, when her health be improved, I find the tumours remaining, I propose to try small doses of mercury in combination with iodine. I have thus confined myself to a simple detail of facts, without pretending to give any explanation of them, or to theorize on a subject where we are so scantily supplied with materials for speculation.

34. *Fracture of the Clavicle caused by muscular action.*—The *Revue Médicale* for March 1841, contains an account of a case of this kind, copied from the *Revista Medica*, No. 1, 1841. The subject of the case was a colonel of cavalry, about sixty years of age, whose health was somewhat impaired by repeated attacks of syphilis. In mounting his horse, he experienced a sensation as if something had broken, followed by acute pain in his left shoulder, and on examination it was found that the clavicle was fractured in the middle.

35. *Gangrene produced by the Immovable Apparatus applied for fracture of the fore-arm, in a child.*—In our No. for Feb. 1840, p. 460, we recorded several cases in which unfortunate results followed the use of the Immovable apparatus. The following is another example of the same character.

Case.—A child, æt. 12, of delicate constitution, fractured both bones of the fore-arm by a fall from a carriage; the surgeon applied the ordinary apparatus, which he had previously moistened with clean water; this tightened application caused horrible sufferings during four days, when the surgeon replaced it by the starched bandage, which was less tight than the first, so that it was more easily borne; nevertheless, two days afterwards, dark vesications showed themselves at the extremities of the fingers, and on the 12th the patient was brought to the Hôtel Dieu, with well-marked gangrene of the hand and lower part of the fore-arm. On the following day amputation of the fore-arm was performed. The patient ultimately recovered.—*Med. Chir. Rev.*, Oct. 1842, from *Gaz. Méd. de Paris*.

36. *On Contusions of Muscles.*—By WM. ALLISON. The most interesting circumstance connected with contusions of muscles is the difficulty of distinguishing those injuries from dislocations or fractures of those bones which form cups for joints. Muscles are bruised by falls or blows; a limb is consequently stiff (whilst lengthened or shortened,) and it becomes motionless at a joint, so that neither flexion nor extension can be performed by the subject of the accident; and sometimes considerable swelling ensues before a medical man arrives. The surgeon's attempt to move the limb, in order to ascertain the nature of the injury, produces a painful spasmodic action of muscles, sometimes without proving advantageous to himself, in his endeavour to find out the precise cause of the loss of muscular action and the stiffness of the limb. And whilst the surgeon has no means of completely satisfying himself with respect to the accident, he is closely questioned by the patient and his friends, and must either express his doubts or give indirect answers. We all know that by sleeping with the head upon the arm, so as to make good pressure on the median nerve, we may become unable, during many minutes after waking, to move the fore-arm; that by sleep-

ing cross-legged in a chair, so as to make a firm pressure upon the popliteal nerve, we may be, during many minutes, unable to stand upon the leg; that rheumatic stiffness may require great muscular efforts to restore the use of the limbs; and that sometimes after fractures of the arm or thigh, one means only can overcome the muscular rigidity, and restore action—namely, the frequent, resolute efforts of the patient himself to put the muscles in action; but I think it behoves us especially to ascertain the different effects and the practical consequences of violent muscular contusions.

1. The muscle or muscles may be so bruised as to be simply benumbed (with tonic or permanent contraction or with relaxation), the nerves being affected by the fall or blow, something like the brain from concussion.

CASE I.—Mr. Smith, of this town, remained with his leg, for half an hour, under a horse which had fallen with him, and which had then laid upon him, the horse having made fruitless attempts to get up whilst the leg was under him. Mr. Smith could not move his leg when first lifted up; but, being supported, he made great efforts to use it, until in ten or fifteen minutes he gradually became able to walk.

CASE II.—A woman, named Parkin, of Ordsall, fell from a load of hay upon the hard ground, in a very hot, dry summer; her thigh was for some weeks in the exact position of a dislocation into the ischiatic notch. By forcible extension I could place the limb in the natural position without pain; but it always returned to the apparently dislocated position. No fracture of the acetabulum nor of the neck of the thigh-bone could be felt. In four or five weeks she recovered the use of the limb.

2. The muscles may be bruised whilst in action, and remain stiff (with atonic contraction or with relaxation) so long as they are left at rest; but the moment an attempt is made by the patient or surgeon to move the limb, a violent, painful quivering or irregular spasmodic action comes on, and the limb cannot be placed in the natural position.

CASE III.—A boy was carrying two pails full of water, suspended from his shoulders; in attempting to step down with them, from a very highly-raised causeway, he slipped backwards and sideways upon the edge of the causeway, shooting his heels before him. On my arrival his leg presented the appearance of a dislocation upon the pubis. Every attempt to bring that knee to a level with the other, either on a mattress or when standing upon the sound limb, failed; but it produced painful, spasmodic muscular action. The chief pain was in the groin, where there was a swelling; but as the head of the thigh-bone could not be felt there, I proclaimed the accident to be “a serious injury of the muscles,” which probably would continue some weeks. By leeches, fomentations, &c., the boy recovered in a week.

3. Muscles may be bruised, with extravasation or some injury ending in supuration.

CASE IV.—I was called (July 1) to a lady who had been thrown out of a pony carriage in this town; her shoulder was dislocated, and her leg was bruised. Both before and after the dislocation was reduced she walked twenty or thirty yards very well, and she was sent home, a few miles off, in a chaise. The leg swelled, and became stiff and useless (to herself immovable). After leeches, fomentations, poultices, &c., had been used, with entire rest for upwards of five weeks, she became alarmingly ill, with high constitutional disturbance during her seventh month of pregnancy; and in about a week from that time (on the 17th of August) I opened a deep-seated abscess under the fascia of the gastrocnemius muscle, after which she became perfectly well, before her confinement (on the 17th of October), from which she recovered as usual.

4. Muscles may be bruised, with a laceration of fibres.

CASE V.—In June, 1839, I was desired to visit a stout, heavy, muscular man, who, it was supposed, had dislocated his hip. On my arrival I heard that, whilst sitting upon the shelvings of a cart, he fell backwards with his shoulders upon the wheel, and reached the ground (hard sand-rock) in about the sitting position. Moving the limb gave excruciating pain, and occasioned spas-

modic muscular contraction; nevertheless, after having placed his shoulders and hips in a straight line upon a mattress, and having grasped each ankle with one hand, I drew him downwards towards the bottom of the mattress, when I found the inner ankle-bone of the injured side full an inch and a quarter below the other, with the heel inclining inwards. I could bend the knee upwards towards the abdomen, but could not cross one thigh over the other. Adduction could be effected with some difficulty; but this limb was always longer than the other by an inch and a quarter, with the knee separated, and the toes turned outwards when in the easiest position, and there was a constant pain in the perineum. If the case had been one of dislocation into the foramen ovale, I supposed adduction could not have been effected, and I was not aware that it could be any other variety of dislocation. There was no crepitus about the joint; I therefore believed it to be lengthening of the limb, mentioned by the late Sir A. P. Cooper, and delivered my opinion decisively, "that there was not any dislocation." However, I felt much more satisfied after my partner had accompanied me on my next visit. To the question, "What is the accident?" we replied, "a rupture of some part of the muscle which forms the buttock."

The gentleman was bled in the arm, took an opiate, had his hip fomented, and warm, damp linen kept upon the painful part; he then took castor oil; on the following morning twelve leeches were applied, and afterwards poultices. We cannot lift patients so affected into and out of warm baths; he was kept in the easiest posture, &c., and the case went on quietly; but the lengthened state of the limb, the inability to move it without violent pain for some weeks, and the sensation of something in the perineum, gave rise to doubts amongst his friends respecting a dislocation. In this case extension of the rigid muscles after the second week, by pulleys applied as if for a dislocation into foramen ovale, until fainting was produced, appeared to be serviceable. The consequences of the accident were, not only that the limb gradually became of the same length as the other, but that contraction went on until it was about an inch shorter, as it remains to this day, that he halts in walking, and that he cannot ride on horseback without making the hip and thigh muscles very painful. I have on several occasions seen limbs as rigid from falls and bruises, when all attempts at motion have given violent pain; but in this case I cannot account for the lengthening and subsequent shortening of the limb, but by a laceration of muscular fibres. He can now walk ten or fifteen miles in a day without fatigue.

In relating the foregoing cases, I may not have classed them correctly. For instance, the pregnant lady may have had some laceration of the deep-seated tissues of her leg, as the carriage wheel had evidently passed over it; but that being now doubtful, merely serves to show the difficulty of stating the precise extent of injury at the first visit after an accident.

A surgeon, called to reduce a dislocation, has to distinguish one from a fracture near the joint; and sometimes, in forming his diagnosis, he is perplexed by muscular rigidity; at other times by considerable tumefaction from extravasation of blood; and on some occasions by extreme tension from effusion, the consequence of inflammation. As the late Sir A. P. Cooper, when speaking of dislocations, said, "Few accidents are more likely to endanger the reputation of the surgeon, as the patient may become a living memorial of his ignorance." I shall not apologize either for having called the attention of surgeons in the commencement of their career to this particular part of their practice; or for reminding them further that the biceps tendon may be ruptured, or that it may be displaced from its natural situation in passing over the head of the os humeri.—*Prov. Med. Journ.*, May 28, 1842.

37. *Ununited Fracture treated by rubbing ends of fractured bones together.*—MR. WORTHINGTON records, in the *Prov. Med. Journ.*, (Oct. 29, 1842,) a case of fracture of both bones of the leg, in a man forty-two years of age, in which, after ten weeks no bony union had taken place. The ends of the bones were then rubbed together daily for three days, after which the limb was placed in an apparatus to prevent all motion, which was removed in six weeks, when union was found to have taken place.

38. *Urinary Calculus—Lithotripsy once and Lithotomy twice performed.*—An interesting case of this is recorded by Mr. R. ELLIOTT, of Chichester, in the *Prov. Med. Journ.* (Oct. 29th, 1842). The patient was a farmer, sixty-three years of age, with a calculus measuring two inches and a half, by two inches, by the lithotrite. In March 1838, Mr. E. in five operations, broke up the calculus, the detritus passed easily; all symptoms of the disease ceased, and the patient remained in perfect health for a year; when he was seized with repeated attacks of renal calculi. The prostate being enlarged, and the bladder irritable, with more than one calculus in it, Mr. E. advised, and performed the lateral operation, and removed four calculi of triple phosphate, weighing about two drachms.

Nearly two years rolled on without inconvenience, when fresh symptoms of stone presented themselves, and in July 1842, Mr. E. again performed the lateral operation, and removed a kidney-shaped calculus of the triple phosphate formation weighing five drachms. The patient in October last was in perfect health.

39. *Injections of infusion of Cubebs in Vaginitis.*—M. PIORRY relates in *La Gazette des Hôpitaux*, (May 1842,) the case of a woman, twenty-three years of age, who had suffered nine months from intense urethro-vaginitis, attended with acute pain, and an abundant discharge. She had tried every usual remedy for its removal without success. M. Piorry ordered an injection made with one ounce of cubebs powder, infused in one pint of water, to be thrown into the vagina six times daily. In two days the discharge had greatly diminished; but the inflammation in the urethra remained intense as before. She was therefore ordered to take 45 grains of powder of cubebs every hour, and in twelve days the pain and discharge had entirely left her, and she was dismissed cured.

40. *False Joint of the Humerus treated successfully by the Seton.* By M. BARONI. —A man, thirty-seven years of age, fractured his humerus; but, in consequence of mismanagement, and the fractured extremities not being kept in apposition, nor any means used to keep the limb steady for sixteen days, a false joint was the consequence. The fracture was found to be oblique, and the extremities of the bone passed each other. The limb was held extended so as to separate the fractured extremities, and a long needle, armed with a skein of cotton, was passed between the extremities of the bones, and the seton left there. Little inflammatory action was excited; and the limb being imperfectly secured, some weeks passed, and still the fractured extremities were disunited. Feverish symptoms, however, soon after this supervened, attributed to exposure to cold; inflammatory symptoms attacked the wound, the discharge of purulent matter became abundant, and a phlegmonous tumour formed in the axilla. The arm was now more securely fixed, osseous matter was thrown out, and within two months the seton was withdrawn, when the wound rapidly healed, and the fractured surfaces became firmly united.—*Ed. Med. Journ.*, Oct. 1842, from *Bulletino delle Scienze Mediche*, Jan. 1842.

41. *Spontaneous obliteration of the Axillary Artery.*—Mr. OKE relates an example of this in the *Provincial Medical Journal*, 23d April, 1842. Several others have been recorded by Mr. Turner, in the third volume of the *Medico-Chirurgical Transactions*.

42. *Dislocation of the Tibia backwards.*—Mr. C. B. ROSE relates, in the *Provincial Medical Journal*, (June 11th, 1842,) the following case of this rare accident.

“On the 17th of December, 1829, I was hastily summoned to an accident which had occurred at the principal inn of this town, situated within fifty yards of my own door: a stage coach had been just driven up to change horses, and, as is usual, a ladder placed beside and against it; the woman who collected and

delivered the parcels had ascended the ladder, and was standing upon it, when a man in a state of intoxication drove furiously against the ladder, upsetting it and throwing the woman violently to the ground; she was immediately taken up, and carried into the kitchen of the inn; I was quickly by her side, and on examining the injured limb, found the tibia completely dislocated at the knee, the head of that bone having been driven behind the condyles of the femur into the ham, with the patella thrown to the outside of the external condyle of the femur, and the leg in a state of fixed extension.

"I immediately, and without difficulty, restored the parts to their normal situation, by applying one hand to the patella, the other to the back part of the upper portion of the tibia, and simultaneously pulling and pushing those bones into their natural positions. The patient was then removed to her home, a distance of about two hundred yards from the inn, and placed in bed. By the employment of leeches, evaporating lotions, and strict rest, inflammation was kept in check; in short, no untoward symptoms whatever arose, and after the lapse of a few weeks she perfectly recovered the use of the joint."

A similar case is related by Wiseman in his surgery.

43. *Cancer*.—The following interesting remarks on cancer are extracted from a clinical lecture delivered at the Middlesex Hospital, by Dr. WATSON.

"Cancer is a very obscure disease, and one of the most important subjects for the consideration of the pathologist. Its fatality and frequent occurrence, the acute pain by which it is generally attended, and its hereditary character, combine to render it of extreme interest. But another interest attaches to it, from the obscure nature of the organic element of the disease, and from its peculiar mode of growth. Recently much light had been thrown upon the subject, and it is to be hoped that still greater light is about to be thrown on it, for all pathologists looked with anxiety to the result of Mr. Kiernan's investigations, which I believe will shortly be placed before the profession. In the '*Lancet*,' Dr. William Budd, of Bristol, has published two very interesting papers, to which I would direct your particular attention. They were published in two consecutive numbers of that journal for May last, and they are written, as every thing from the pen of Dr. William Budd, extremely well. Whatever may be the causes of cancer, it appears to be clearly ascertained that, however numerous or distant from each other the parts affected by it, the infection proceeds from one original tumour. It often occurs that the disease manifests itself in different parts of the body, sometimes contemporaneously, sometimes at different periods. But all those are but branches of the same malady. Generally speaking, the internal parts are affected at a period subsequent to the appearance of the disease externally. Dr. Budd has directed attention to the progress of cancer under some of its ordinary phases. Let us state an example: a small, hard knot is detected in the female breast, lying loose in that organ; this tumour enlarges, grows, fastens on the parts around, no longer lies loose in the cellular tissue, but contracts adhesions with the surrounding parts, spreads out its claws, as it were, like a crab (hence the name cancer), seizes on the glands of the axilla, and disseminates small tumours through the viscera. On examination after death, cancerous matter is detected in the viscera and lymphatic glands, and is frequently found in the lungs, the liver, and peritoneum. From these facts, and from the circumstance that the veins are found charged with the same cancerous matter, Dr. Budd infers (and a most important inference it is, if drawn from a sufficient number of authenticated facts) that the secondary tumours discovered in the viscera, and other parts so diseased, are derived from the first tumour—are caused by seeds from the primary or parent growth, conveyed by the blood to those localities, and form themselves new centres for the further dissemination of the complaint. Some curious results of the microscopic investigation of cancerous matter are adduced in aid of this hypothesis. The labours of Müller, who has investigated the minute anatomy of cancer by the help of the microscope, show that the substance of cancerous tumours is a soft kind of pulp, held loosely together by a fibrous web. The pulpy matter presents an organized form

of an extremely interesting kind, being found to be almost entirely composed of minute globular cells, containing within their cavities a vast number of very minute granules. Similar cells are found in the organization of portions of the vegetable kingdom. Those granules are supposed to be what are called cystoblasts, or germs of new cells, and becoming detached from their parent cells, are carried about until deposited in some place where, from their size, they are unable to pass through the smaller capillary vessels, and there they become parent cells, and engender new growths. This is a consideration of immense practical importance, as if, fully established, it would of itself demonstrate the necessity of immediate removal of the first cancerous tumour by the knife, and of its complete removal. The timely extirpation of cancerous growths is thus indispensable. In very many cases removal by the knife has proved fully successful in wholly eradicating the disease: in many cases it had not been successful. But in the latter it is inferred that the removal of the cancerous matter had not been complete—that either the operation had been deferred until the germs had been disseminated, or that the knife had not removed the whole of the diseased matter. So very minute are those germs, that it is altogether impossible to detect them unless by means of microscopic power; and Dr. Budd recommends that the cut surface should be subjected to microscopic examination, as if on that surface he found any of those cells, the clear inference is, that others have been left behind, and consequently that the removal has been incomplete. In those operations the surgeon should cut away not only enough, but what may be called more than enough.

“This subject, gentlemen, is altogether most interesting; but it requires further examination. What the exact nature, and what the origin of those minute cells, are as yet uncertain; they may be termed a sort of hydatids. They appear, like plants, gifted with an independent vitality, possessing the power of generation, increasing and multiplying prodigiously, and capable of being conveyed to remote distances from the parent growth, without losing their character or powers; they might indeed be appropriately called a sort of parasitic animal. What is the origin of the primary or parent growth, it is, at least as yet, impossible to say. Some authors contended that cancer is infectious and contagious. Dr. Budd states that Langenbeck injected cancerous pulp from a living body into the veins of a dog; the animal after some time wasted away and died, and on examination several cancerous tumours were found in his lungs. Soot is supposed to be a cause of cancer, and one species of that disease is known as chimney-sweeper's cancer. Dr. Budd has alluded to cases of cancer of the penis in men, whose wives laboured under cancer of the uterus, which would tend to establish the doctrine of its being contagious. The germs of cancer clearly possess an independent vitality, and are like parasitic animals, or a kind of fungous growth, perhaps somewhat resembling the disease known as scald head, which is now held to depend on a sort of cryptogamic plant, the *habitat* or one of the *habitats* of which is the human head. As I totally disbelieve the doctrine of spontaneous generation, I cannot yield to the suggestion that these germs originate in the body, but am of opinion that they are introduced by some yet unascertained mode. The introduction of insects into the human frame by unknown means is familiar to us all, and from all that is known I am induced to believe that cancerous matter is similarly introduced. In conclusion, I would again impress on the student the necessity of pursuing this important investigation, and again strongly recommend to him a careful perusal of the whole essay of Dr. Budd, as most interesting and instructive.”—*Provincial Medical Journal*, Oct. 29th, 1842.

44. *Femoral Aneurism—operation—recovery.* By JAMES SYME, Prof. Clin. Surg.—William Garrick, aged 17, from Shetland, was admitted into the hospital on the 20th of May, 1841, on account of an aneurism of the femoral artery. He stated that, in the latter part of February, when cutting a piece of wood, with the large knife used by seamen, he had accidentally thrust the blade into the inner side of his left thigh, a little below the middle. A great gush of blood

immediately sprung out, but was speedily arrested by the pressure of four half crowns which he had the presence of mind to apply firmly over the wound. In a few days, the bandage being taken off, it was found that the wound had healed, and nothing unusual was noticed until a week afterwards, when he perceived a sort of thrilling sensation at the injured part. This increased daily, and in the course of another week, a pulsating tumour, the size of a small hen's egg, was noticed; he still took no alarm, but finding that the tumour progressively increased, at length applied to a surgeon, who explained the nature of his case, and sent him off to Edinburgh.

When admitted, he complained of coldness in the limb, which was also slightly œdematous, notwithstanding the support of a flannel bandage, which had been put on before he left home. The tumour was about the size of a goose's egg, had a strong, uniformly distending pulsation, though not very distinctly defined, and lay under the lower edge of the sartorius. The sac could be readily emptied by pressure, either directly over it or on the trunk of the artery at the brim of the pelvis, so as to make all trace of the swelling to disappear.

It was thought, in this case, that simple ligature of the femoral would not prove sufficient for effecting a cure; and that, as in brachial aneurism, from wounding the artery in venesection, it would be necessary, after opening the sac, to tie the vessel on both sides of its aperture; but for my own part, I did not despair of success, from merely obstructing the artery above the tumour, since the anastomosing circulation beyond it was much less free than at the bend of the elbow. At the same time I greatly dreaded the danger of conveying ligatures round the artery, where it lay within the sac, in close proximity to the vein, or not improbably almost incorporated with it by the pressure of the blood. I therefore resolved to try the effect of simply tying the femoral in the ordinary way, as this proceeding seemed to be safe in itself, and in the event of failure, promised to present no obstacle to adopting the other alternative.

The operation was performed on the 26th; the pulsation ceased immediately and completely, without any return; the swelling diminished daily; the ligature separated on the 14th of June (the eighteenth day); and the patient went home cured on the 23d of the same month.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Nov. 1842.

45. *Artificial Anus*.—Mr. ALFRED JUKES, surgeon to the General Hospital, Birmingham, has performed the operation for the formation of an artificial anus in the loin, in a case of carcinomatous stricture of the rectum. The patient, a woman 30 years of age, lived sixteen days after the operation, during which time "the bowels acted freely, and were relieved from every sign of obstruction by the artificial aperture." Death was attributed to chronic inflammation of the peritoneum. We have been favoured with a report of the case, and shall notice it more particularly in our next number.

46. *Retro-pharyngeal Abscess*.—The infrequency of a collection of pus in the submucous cellular tissue behind the pharynx, the obscurity of the symptoms, and the danger to life caused by the existence of a retro-pharyngeal abscess, render it a subject of great importance and interest. M. Mondière has collected a series of these cases, drawn from various authors, which may serve to remove in part the obscurity that hangs over the semeiology of this disease. Out of 18 patients, 11 were adults, and the remaining 7, children from eleven weeks to four years old. In three cases, the abscess was caused by the existence of an inflammation of the mucous membrane of the pharynx, which had been propagated to the sub-mucous cellular tissue. The retrocession of erysipelas appeared to have produced it in another case; in two others it seemed to depend on rheumatism, and in one to have been caused by a stricture of the œsophagus just below it. Caries or tubercular disease of the cervical vertebræ is another cause, the abscess being merely symptomatic. Several examples of this have been placed on record, but, in examining the part, the simple erosion of the bone caused by the prolonged contact of the purulent matter must not be mistaken for caries.

The progress of these abscesses is generally acute, the symptom of suffocation, however, not showing itself until the abscess is fully formed. The collection symptomatic of caries must necessarily be chronic in its formation, and nevertheless the dyspnoea and dysphagia come on suddenly, in conformity with the pathological law, that a gradual compression may be exercised with impunity for a long while on organs the most essential to life, no symptoms being produced until the pressure had been carried beyond a certain amount.

The termination of these abscesses is not fatal when they have been recognised and opened early. Death occurred only once out of thirteen cases where the abscess was opened, but if the disease is mistaken, death is almost inevitable, either from suffocation by pressure, or from its bursting into the trachea or chest. Examples are recorded by Messrs. Mott, Manoury, Dariste, Petrunti, and Mondière.

The primary symptoms are, local pain and an injected state of the pharyngeal mucous membrane with or without fever, and followed by difficulty of swallowing or breathing. At the end of a certain time another set of symptoms show themselves, resulting from the formation and accumulation of pus, such as irregular shiverings, œdema on the sides of the neck, more or less tumefaction of the posterior paries of the throat, and threatened suffocation. To these Petrunti adds displacement of the larynx forwards.

The diagnosis would not be attended with difficulty if the surgeon were to think of the possibility of such an abscess forming, and to examine the posterior part of the fauces, as the tumefaction is so well marked. The dyspnoea, however, so closely resembles that of other complaints, that the existence of an abscess may not be suspected. The complaint it most closely resembles is croup, from which it may be distinguished by the symptoms in croup not being continuous, while they are so in the retro-pharyngeal abscess, although they have an occasional exacerbation. Besides, the difficulty of breathing and the agitation of the patient are increased by pressure on the larynx, which is not the case in croup. The dysphagia also increases at the same time with the dyspnoea. The safest plan, however, is to examine the interior of the throat with the finger, an exploration that should be made in all diseases resembling croup or œdema of the glottis.

The only indication with regard to the treatment is to give a speedy exit to the pus, which should be done as soon as fluctuation is evident, either with a bistoury or pharyngotome. Mr. Fleming uses a trocar that he has had constructed for the occasion, but it has the inconvenience of the opening being liable to close, and thus requires repeated punctures. Dupuytren advises a large incision to be made. When the mouth cannot be opened sufficiently wide for an instrument to be used with safety, it would be advisable to burst the abscess either with the finger or the handle of a spoon, pressing gently at the same time with the thumb and fingers on the side of the neck on a level with the larynx, to prevent the matter spreading laterally; or a pair of scissors may be used, one blade being sharp-pointed and shorter than the other, which should be blunt. The instrument may be passed closed to the back of the pharynx, then the sharp blade separated, thrust into the abscess rather obliquely, and the blades being closed, a free incision would be readily made without danger.—*Prov. Med. Journ.* Oct. 15, 1842, from *L'Expérience*.

47. *Syphilitic Retraction of the Muscles*.—This is a disease of rare occurrence, and which has only of late received attention. It affects most frequently the flexor muscles of the fore-arm, if we may be allowed to form an opinion from the generality of cases observed at the venereal hospital, under M. Ricord. The three patients who presented this remarkable affection had arrived at that point of constitutional infection characterized by the symptoms which are denominated tertiary by M. Ricord. In all these the retraction was very similar; the flexors of the fore-arm being affected by it. The muscles appeared shortened, as a result of the permanent contraction, which did not permit the exten-

sion of the fore-arm; but their tissue, though firm, presented no appreciable alteration. An important symptom was the peculiar pain which existed in the contracted part; this pain was increased at night, and resembled closely that experienced in syphilitic affections of the bones. In one of the patients the retraction was cotemporary with tertiary ulcerations of the throat; in another, with periostitis of the tibia. These patients were submitted to the treatment of iodide of potassium. The success, under its influence, was as prompt and easily obtained as in other tertiary symptoms. The pains ceased in each one as soon as the fifth or sixth day. The movements of the limbs underwent a progressive amelioration, and were soon perfectly restored.—*Lond. Med. Gaz.*, July, 1842, from *Bull. de Thérapeut.*

48. *Treatment of Umbilical Hernia in children by Ligature.*—A child, aged eight months, was brought to M. Bouchacourt suffering under umbilical hernia, which had been observed a few days after birth: various means had been employed to keep the swelling reduced and to effect a cure, without producing any benefit. The hernia easily protruded, and formed a considerable swelling. When it was returned, the finger readily entered the unobliterated ring, and felt its smooth and regular edge. The operation was conducted as follows:—The child being secured and the hernia returned, the surgeon assured himself by careful examination that no intestine or other viscus remained in the sac, by rubbing its sides against one another between the finger and thumb. Keeping up a pressure with the finger close by the ring, to prevent the protrusion of any part into the sac, a needle armed with double thread was passed through the base of the projection in the integuments into which the hernia protruded, as into the finger of a glove, and the threads being separated, each was tied upon the corresponding half of the swelling. The base was also enveloped by a third thread, carried round the whole, and drawn tight. The child did not appear to suffer much—only a small piece of lint was placed on the part. The first night the infant cried and slept little, but afterwards went on well, with the exception of slight fever in the evening and a diminution of appetite, no alteration being observed in its other functions. The stools were regular, and it had no vomiting. After a few days the encircled part swelled, sloughed off, leaving a considerable ulcer. In two months and two days after the operation, a very small surface remained unhealthy, giving vent to a discharge which scarcely tinged the linen. The ring appeared to be obliterated. The hernia had not returned, and from the day on which the ligature was applied, the swelling had not once shown itself, notwithstanding the efforts and cries of the child.—*Lond. Med. Gaz.*, July, 1842, from *Revue Médicale.*

49. *Passage of Air into the Veins.*—Dr. ASMUS was removing a steatoma as large as the two fists from the region between the lower jaw and clavicle of a man forty years old, and was very carefully separating its base from the carotid artery with which it was in contact, when he accidentally opened the internal jugular vein, which had been pushed far from its usual place by a lobe of the tumour. No blood flowed; but on the instant he heard the air enter the vein with a bubbling sound. He asked the man how he felt, who said "Well;" but the next moment cried out, "Its all up!" and began to be convulsed, first in the face, and then in the whole body. He sank down, and at the same instant another bubble was heard; but still no blood flowed. Alternate convulsive movements and opisthotonos ensued; the face was deadly pale, the breath short, and death seemed close at hand. Rapid bleeding now took place from the wound, and a stream of black blood was seen to issue from the vein, but as often as the patient was convulsed, air again passed in, and the bubbling was distinctly both seen and heard. A ligature was as quickly as possible put upon the vein above the injured part, and with this the bubbling ceased; the tumour was cut off level and the patient was put to bed.

Syncope, alternating with severe convulsions, still continued; the pulse was not discernible, the heart seemed only to vibrate, and the respiration was short.

Stimulants and a variety of restorative means were employed, and about twelve hours after the operation (in which the loss of blood was altogether moderate,) the patient began to revive. His condition continued to improve, and he at length completely recovered.—*Brit. & For. Med. Rev.*, from *Medinische Zeitung*, June 8, 1842.

50. *Intra-parietal Hernia after a Wound of the Abdomen*.—M. BÉRARD details in a clinical lecture, a good example of an accident which is apt to occur not only in penetrating wounds of the abdomen, but in operations for hernia. In the endeavour to force the intestine (which had protruded) back into the abdomen, it was pushed up between the layers of the abdominal muscles, and here, in the cavity thus artificially formed, became strangulated. The case was the more perplexing, because, when the intestine was in this position, the finger could be easily passed into the abdomen, and the intestine seemed to be entirely reduced.—*Ibid.* from *Gazette des Hôpitaux*, June 28, 1842.

51. *Case of Strangulated Hernia through the foramen thyroideum*. By Dr. FRANTZ.—The patient was a strong woman, forty years old, whom the author found with many of the signs of strangulated hernia, and complaining of a severe pain at the upper and inner part of the left thigh, which had come on suddenly and was increased in paroxysms at intervals of about ten minutes. There was no redness, heat, or swelling at the part, but on pressing the point of the finger high up between the triceps and adductor muscles, severe pain was produced. There was pain, but no tenderness, of the abdomen. The patient had long had double femoral hernia, but neither of these was now down. Three years before, she had had signs exactly like the present, but had been suddenly relieved when, as she was pressing upon the part, something seemed to go back with a noise into the abdomen. Since that time the same symptoms had occasionally recurred in a less degree, but they had been always relieved by the same plan of pressing, as if to reduce a hernia. On the present occasion, however, they were much more severe; bleeding, purgatives, repeated applications of pressure, and various other remedies were tried in vain. On the fourteenth day the signs of strangulation having regularly increased, and stercoraceous vomiting having existed since the ninth, the patient seemed to be quickly dying, when, to the surprise of all, a spontaneous evacuation or fæces took place, and she began slowly to recover. Her recovery was ultimately complete.—*Ibid.* from *Allgemeine Med. Central-Zeitung*, April 27, 1842.

52. *Observations on Fibrous Polypi of the Uterus*.—On the occasion of a patient labouring under polypus of the uterus being admitted into the hospital, M. BÉRARD made some observations on the management of these growths.—The patient was a single woman, forty-seven years old, who had good health, and menstruated regularly from the age of eleven to twenty-four. From that time, however, till her forty-fourth year menstruation became very scanty, but afterwards returned, being exceedingly abundant, and at length flowed continually in greater or less quantity. From this constant loss of blood the patient became at length much exhausted, and was admitted into the hospital in a state of complete anæmia. An examination per vaginam discovered the neck of the uterus to be distended, its orifice directed to the left side and slightly open, and the lips of the os uteri were thinned, and its cavity was occupied by a rounded oblong tumour, which was ascertained to be attached to the interior of the uterus.

With reference to the symptoms that were observed, M. Bérard remarks that Levret is mistaken in supposing that hemorrhage occurs only when the tumour having cleared the cervix uteri and descended into the vagina, the circulation in it becomes impeded by reason of the constriction of the polypus by the neck of the uterus. He is on the other hand disposed to regard these hemorrhages as active, and analogous to those which take place during the course of abortion, an analogy the more strongly marked, since in the one case as in the other uterine contractions take place. From a consideration of the symptoms he

proceeds to an inquiry into the proper treatment, and decides in this case in favour of excision rather than of the ligature. The dangers of excision he regards as trivial, while the great superiority which it possesses over the ligature in the speedy removal of the growth is universally admitted.

The operation, which proved completely successful, was performed by placing the patient in the position for lithotomy. Two assistants kept the thighs properly bent, while a third made pressure on the hypogastric region. The operator having introduced a bivalve speculum, incised the two commissures of the cervix uteri with a probe-pointed bistoury, which permitted the polypus to enter the vagina. The speculum was then withdrawn, and two hooks being placed in the tumour it was gradually drawn down to the vulva. The operation was then completed by excising the pedicle of the polypus with a pair of curved scissors. The patient perfectly recovered.—*Ibid.* from *Gazette des Hôpitaux*, Jan. 8, 1842.

OPHTHALMOLOGY.

53. *Mechanical Lesions of the Eye.*—Dr. O'BEIRNE has published in the *Dub. Med. Press* a curious case in which a small nail was accidentally driven into the eyeball, and lodged there for many days.

The patient, a woman, said that, while shaking a carpet, she felt something sharp strike with force against her right eye. She became sick immediately, and shortly afterwards she found on her apron a gelatinous substance, which is supposed to have been the lens. When admitted into the hospital, there was so much tumefaction and ecchymosis of the eye that the cornea could scarcely be perceived except at one point, where there was seen to be a depression, from which a bloody fluid oozed out. There was no appearance of any foreign substance in the eye; and indeed the woman herself said that the nail had been found on the carpet. In spite of the most active antiphlogistic treatment, the inflammation and suffering increased for nearly a fortnight: and then an eschar formed about the centre of the cornea. Upon making a puncture there, a considerable quantity of purulent matter flowed out with decided relief to the symptoms. Dr. O'B. while making the puncture, thought that he felt the point of his lancet strike upon a hard substance, and therefore suspected that something was lodged in the eyeball. On the following day, his suspicions were confirmed; and he then extracted, not without some difficulty, a flat-headed nail of about three quarters of an inch in length. The inflammation quickly subsided; but, as a matter of course, the sight of this eye was irrecoverably lost.

M.M. Cunier and Stievenart have related cases in the first vol. of the *Annales d'Oculistique*, where fragments of fulminating capsules had been driven into the eye. In one case an entire capsule was extracted between two and three months after the occurrence of the accident.—*Med. Chirurg. Rev.* July, 1842.

54. *Wounds of the Supra-ciliary Region.*—M. CONSTANT has, in the first volume of the *Annales d'Oculistique*, established by numerous historical and necroscopic researches that the blindness, which sometimes follows wounds of the supra-ciliary region, is, in almost every case, owing to some other cause than to an injury of the frontal nerve, as is usually imagined. M. Walther, in a recent number of the *Journal der Chirurgie und Augenheilkunde*, alludes to several cases in which no blindness occurred, although this nerve had been positively divided either accidentally, or designedly, for the relief of neuralgia.

When loss of sight follows wounds about the forehead, he is inclined to attribute it to some simultaneous derangement of the organs contained within the orbit or the cranium, and not to any direct injury of the frontal nerve.

M. Walther endeavours to show that there is no direct communication between the frontal nerve and either the optic nerve or the retina; that even with the ciliary system of nerves its communication is only indirect through the medium

of the nasal nerve; and that impressions on it, (the frontal,) are transmitted to the eye through the medium of the encephalon. According to this view, there is therefore no direct, but only a reflex, continuity of action.

The nutrition of the eye is disturbed by any lesion of the ganglionic nervous filaments, which are distributed on this organ. Thus diseases of the neck, or operations performed in this part, will sometimes produce ophthalmia, or even an atrophy of the eye. If, then, says M. Walther, lesions of the great sympathetic nerve have so marked an effect on vision, why should not an injury of a branch of the trigeminus, which is well known to be so intimately connected with the eyeball, produce the same results?

The French Medical Gazette adds to its analysis of M. Walther's paper a case where blindness followed a slight wound of the forehead, although there was no obvious commotion either of the eyeball or of the encephalon. The blindness in this case was owing not to amaurosis but to the presence of a cataract: in consequence probably of the nutrition of the eye being disturbed.—*Med. Chirurg. Rev.* July, 1842.

55. *Exophthalmia, with Œdema of the Conjunctiva, and Opacity of the Crystalline Lens in a Puerperal Woman.* By M. BLANDIN.—A woman forty-one years of age, was delivered, after a tedious labour, on December 3d, 1841. For fifteen days no unusual symptom occurred, but on the sixteenth and seventeenth day the patient was attacked by a violent shivering fit. On the eighteenth day, however, she returned from the hospital to her own home, and for some days afterwards suffered from febrile attacks, though they were no longer preceded by severe shivering. From the 25th of December the right eye began to project, the patient suffering little beyond a sense of weight in the head, principally in the supra-orbital region. Vision was at first unimpaired, but failed as the exophthalmia increased, and at last the patient became quite blind of that side. In this condition the patient applied to M. Blandin, at the Hôtel Dieu. There was then considerable prominence of the right eye, the conjunctiva of the globe was prominent, red, and swollen, and evidently infiltrated. The cornea was natural, the aqueous humour retained its transparency, and there was no evident change in the structure of the iris, but it had lost its contractility, and the eye was uninfluenced by exposure to a strong light. The crystalline lens appeared opaque, and of a shining, milk-white colour; the anterior membranes of the lens being in all probability the seat of the opacity. The volume of the globe was normal, the pain in the affected parts was inconsiderable, and no tumefaction existed of the parotid or cervical glands. The intellectual faculties were perfect and the general health was good.

In his remarks on the case M. Blandin offers some observations on the diagnosis of the affection. Some ramifications of the conjunctiva gave exit to a small quantity of pus from its inferior external portion. From that time the eye gradually retreated into the orbit, and from these circumstances M. Blandin concludes that there existed a small abscess behind the eye. The cause of the formation of this abscess is open to debate. It might be one of those purulent deposits occasionally met with in puerperal women. M. Blandin, however, regards it rather as the result of phlebitis, probably of the ophthalmic vein. He is likewise disposed to regard the affection as altogether analogous to *phlegmasia dolens*, in which disease the femoral vein becomes obliterated, just as here, in all probability, the ophthalmic vein was. On any other supposition the opacity of the capsule of the crystalline lens does not admit of explanation; while, in two other instances in which this lesion of the ophthalmic vein was discovered after death, precisely this condition of the crystalline lens had been noticed during the lifetime of the patient.—*British & Foreign Med. Rev.*, Oct. 1842, from *Gazette des Hôpitaux*, Jan. 27, 1842.

56. *Treatment of Leucoma by Incisions into the Cornea.* By D. HOLSCHER.—Two cases are related in which this treatment was adopted. The case which suggested it was that of a girl, twenty-two years old, who had lost the left eye

from purulent ophthalmia in infancy, and in whom the right was almost blind from leucoma of nearly the whole cornea. Various means had been used in vain. The author, therefore, made an artificial pupil by drawing the iris through the cornea and excising a portion of it. Severe inflammation ensued which was with difficulty managed; but three months after, the patient not only had a good artificial pupil, but the cornea had become much less leucomatous, and this especially at the part where the incision through it had been made. The next bad case of leucoma, therefore, which the author met with, he treated as follows: the patient was a lad fourteen years old, who had lost his right eye from purulent ophthalmia in infancy, and had leucoma of nearly all the left cornea. At four different times, with intervals of eight days, a common cataract knife was passed into the cornea as deep as possible without penetrating it, and was drawn out with a sliding motion. After the first three times no inflammation ensued; therefore, after the fourth, some tinct. opii was dropped into the wound three times a day. Severe inflammation set in, but it was moderated by local bleeding, and the treatment by opium was continued for two months. The leucoma became gradually less, and the patient who could at first only discern light from darkness, became able to guide himself in walking, and to perceive the window-frames in his room. The second case was that of a man forty years old, who had leucoma of one eye from gonorrhœal ophthalmia. It had been variously but vainly treated for a year. The author made incisions into the cornea twice, with an interval of fourteen days. After the second, a tolerably severe inflammation ensued which required active treatment. As soon as it had ceased, sulphate of zinc and tincture of opium were again dropped into the eye, and after a year and a half, not a trace of leucoma could be seen.—*Ibid.* from *Holscher's Hannoversche Annalen*, Sept. 1841.

[Further evidence of the safety as well as efficacy of this plan of treatment will be required, before we shall be induced to repose any confidence in it.]

57. *Local employment of Calomel in Ophthalmia Neonatorum.*—A short time since, Dr. Kluge began to use calomel as a local application in cases of ophthalmia of new-born infants which came under his care in the lying-in department of the Charité at Berlin. The results were extremely fortunate, and Pr. v. Siebold of Göttingen, who was induced to try the remedy, has obtained from its employment very great success.

The manner of introducing the calomel into the eye is by means of a camel's hair pencil loaded with the powder, which is shaken from it into the eye, while an assistant separates the lids. In the treatment of the ophthalmia neonatorum this remedy may be had recourse to as soon as the first traces of the disease appear, and its employment once daily is then in general sufficient. After the lapse of from half an hour to two hours, according to the quantity of the secretion, the eye may be washed from the powder, and the ordinary rules as to cleanliness be attended to. In severe cases the application may be repeated twice every day; but when the disease is mild a single application daily suffices to effect a cure in from four to ten days, if the remedy had been had recourse to from the outset. The more severe and intractable forms of the disease do not appear to have been benefited by the local employment of the calomel.—*Ibid.* from *Medicinische Zeitung*, June 8, 1842.

MIDWIFERY.

58. *Puerperal Fever in Doncaster.*—ROBERT STORRS, Esq., of Doncaster, relates, in the *Prov. Med. Journ.*, April 23, 1842, several cases of puerperal fever which occurred in his practice during the months of January, February, and March, 1841, followed by some interesting remarks on what he considers to be the true origin of the disease. "During the whole of the winter of 1840-1," he observes, "erysipelas, typhus fever, and scarlatina of a malignant form, prevailed

in Doncaster to an unusual extent, especially erysipelas, which I have never before known to be so general or so severe. Puerperal fever was never known to have prevailed epidemically up to this time, or if it did so, it was never acknowledged. On the night of January 7th, or early on the morning of the 8th, the most severe night of the winter, when the thermometer was lower than it had been for many years, I attended Mrs. Downes (Case I), a hard-working washerwoman, with her tenth child. Her labour was perfectly natural, though rather more severe than she was accustomed to, and she had some severe rigors previous to delivery, which I ascribed to the severity of the night. On the morning of the 9th, thirty hours after delivery, she was seized with another severe rigor, succeeded by severe abdominal pain, excessively rapid pulse, and all the symptoms ascribed to puerperal fever in its severe form. She died on the morning of the 12th.

"On the morning of the 13th, I attended Mrs. Boyd (Case II), of Cantley, four miles from Doncaster, an infirm woman. She was seized with severe rigors, also, thirty hours after delivery, and died on the 17th.

"On the same day, January 13th, I attended Mrs. Briggs (Case III), a remarkably healthy woman, aged 28, at Doncaster. She remained quite well until the 17th, when she also was attacked, and died on the 22d.

"Mrs. Berry, aged 24, a delicate woman (Case IV), was confined at Doncaster on the morning of the 24th; the disease commenced on the 25th, and she was dangerously ill for some time, but at length recovered.

"Mrs. Hird (Case V), also a delicate woman, was confined at Doncaster of her fourth child on February 8th. She remained well until the 12th, when the usual symptoms set in, though less severely, and on the 17th she was convalescent.

"Mrs. Bullas, of High Ellers (Case VI), was confined of her seventh child, February 12th. She was attacked on the 14th, and died on the 16th.

"Mrs. Pearson (Case VII), of Doncaster, was confined, February 19th, of her seventh child. She was attended by my friend Mr. Loxley; I called a few hours afterwards, and merely spoke to her; she was doing well; when I called again, on the 21st, the fever was just commencing, and she died on the 24th.

"Mrs. Williams (Case VIII), a delicate woman, was attended by me, on February 24th, of her fourth child. She was attacked on the 25th, and died on the 27th.

"Besides the above eight cases of fever, I attended sixteen other females in labour, from the 8th of January (the day on which I attended the first unfortunate case) to the 26th of February, all of whom did well; some of them within a few hours of those who took the fever, and in two or three instances I went from one to the other. When the first three cases of fever occurred, I changed all my clothes, and used every means I could think of to prevent its spread. On the occurrence of another case, I again did so, and after each succeeding one, made use of such precautions as extreme anxiety suggested. At the same time, I must confess, I had a strong impression that the cause of the disease was epidemical, and that my brother practitioners in the town would probably also have cases of a similar nature. I now determined to leave home for a time, under the hope that, after a change of air, I should be freed from the poison, which I could not now but suppose clung to me personally. I left home on March 1st, making a tour among my friends, chiefly on the borders of Wales, and returned with renewed hopes on the 16th, having again had an entire change of clothes, and using every precaution (as I thought) with respect to ablutions, &c.

"On the morning of the 21st, I again attended a woman in labour, Mrs. Wilson (Case IX), mother of nine children, residing in Marsh-gate, Doncaster. On the 22d, at midnight, she was first attacked with the usual symptoms, and died on the 25th. On the morning of the 22d, before Mrs. Wilson was seized, I attended Mrs. Bask, of Cleveland-street, Doncaster. She remained quite well until the 25th. She was then attacked by the usual symptoms, and died on the 27th. Being now led to suspect that some extra puerperal causes produced the

mischief, I was confirmed in the suspicion by the opinion of Dr. Thompson, of Sheffield, whom I happened to meet in consultation, backed by the experience of Mr. Reedall, of the same town, who kindly sent me his opinion through a common friend; and the cases which I was most inclined to blame I mentioned to Dr. Thompson, who confirmed me in the belief that the fever had probably sprung from them. This was a case which had been, in the commencement, gangrenous erysipelas of the leg and foot, in a stout, gross woman, a near neighbour of mine, of the name of Richardson. On looking back at this case, I recollected that I had been called to her on the very evening prior to my attending Mrs. Downes, the first case, and that the person who was with the latter, as a neighbour, was also a neighbour and friend of Mrs. Richardson, and had been there also on the same evening. And though this erysipelatos case speedily lost its gangrenous character, a succession of abscesses appeared, which every now and then required to be opened, some of them containing a large quantity of offensive pus. The last of these abscesses I opened on the morning I attended the last case but one of this melancholy series. It contained an immense quantity of foul pus, more than a washhand basinful was evacuated, and even then it was far from being emptied. I now determined to cease my attendance altogether on this case, and the patient was taken off my hands by my friend Dr. Branson, who continued to attend her until her recovery was completed, which was some months afterwards. I attended on the 22d and 24th three other cases of midwifery, having made every possible ablution, and in an entire change of clothes; all the patients did well; but considering that it would be too great a risk to continue to do so after producing such a great amount of misery, I determined I would attend no more for a time; I consequently left off the practice for about a month, and am happy to say that, since that time, I have had but one case to cause me any uneasiness; I have gone on as successfully, though perhaps more anxiously than was my former wont. Besides the decided opinions of Dr. Thompson and Mr. Reedall, I am much indebted to my friend Mr. James Allen, of York, and to Mr. Smith, of Leeds, for pointing out to me the probability of the disease arising from some such cause as the one assigned; though, when I saw them, so decided a coincidence as the opening of an immense abscess, and the commencement of fever in two cases immediately following it, had not so strikingly attracted my attention. Having, however, now had my attention completely aroused, I found, on reference to my day-book, that on the very day or the day previous to having attended in labour, all the cases from the 4th to the 8th inclusive—except the 7th—I had opened an abscess, or dressed the wounds of this erysipelatos case; and though I had taken every pains to prevent the conveyance of the contagion from one puerperal case to another, yet, having been unaware of the danger of this particular case, I had probably carried the fomes from it to every one of them.

“As a somewhat singular coincidence, or corroboration of this opinion, I was requested, some months afterwards, on June 11th, to visit Mrs. Richardson, who sent me word that she was nearly well, but wished I would apply a bandage to her leg. My mind, however, misgave me, and I sent my eldest pupil, Mr. G. C. Dunham, to do it on Saturday the 12th. On Sunday he was sent for to the Union Workhouse to a labour, where he remained all day: the case was tedious, but delivery was at length safely accomplished shortly after my visiting the woman that evening. On the Tuesday I called upon her, and found her in the first stage of an attack of intense inflammation. She was bled, &c., and after a day or two of extreme danger, recovered. Having assured myself, as I think satisfactorily, that this case of gangrenous erysipelas and abscess was the origin of the mischief, in all the cases but one, I was yet in doubt how that case had arisen (No. 7), as I did not attend the case myself; she was attended by my friend Mr. Loxley, of the dispensary, and was merely visited by me subsequently. On investigation, I found that her case was also intimately connected with erysipelas, which might have been indirectly transmitted through me in the following manner:

“On February 18th, I attended, in labour, a Mrs. Barrett, of Cleaveland-street,

a neighbour of Mrs. Pearson, who did well; but her child was seized with erysipelas of the abdomen, from the navel to the genitals, of a gangrenous character, and died on February 4th. Mrs. Pearson (Case VII) laid out this child, and was confined herself on February 19th, attended by Mr. Loxley; she was seized with fever on the 21st, and died on the 24th. Her infant (Mrs. Pearson's) was sent out to nurse to a neighbouring village, and was seized with erysipelas when a fortnight old, which also assumed a gangrenous character, and the infant died on March 27th.

"Another of the cases of puerperal fever was also incidentally connected with erysipelas, viz. Mrs. Briggs (Case VIII). She was delivered, and continued on the same bed in which her husband had lain, who had only just recovered from a severe attack of erysipelas and typhoid fever.

"The above cases show not only the probability of the disease having arisen from the precise cause above mentioned, but also its intimate connection with erysipelas generally. The two cases, however, which occurred so soon after my return home, and before I had had any connection with any other erysipelas case, show, I think, the exact source from whence they sprung.

"I will now revert to the cases not of a strictly erysipelatous character, which seemed to me to have owed their origin to the same disease. Ten days after the death of Mrs. Boyd, of Cautley (Case II), I was called to see her mother-in-law at the same house, who was seized with intense pleuritic inflammation, with typhoid symptoms. I saw her on January 27th, and she died on the 29th, being ill only two days; she was upwards of seventy years of age. Mrs. Lockwood, of Cautley, waited on Mrs. Boyd and mother; she had also a mild attack of typhus fever, but recovered. Her son was seized with the same disease after the mother's recovery, and got better after a tedious illness.

"Mrs. Mandy, of Nag's-head-yard, Doncaster, a neighbour of Mrs. Briggs (Case III), who visited and assisted in nursing the latter, was seized a few days after the death of Mrs. Briggs, with severe pleuritis, attended with phlegmonous inflammation, and the formation of an abscess on the chest above the right mamma, and extensive erysipelatous inflammation down the same side to the hip, which has since produced adhesion of the cellular texture to the ribs, and absorption of that structure. She recovered very slowly and with great difficulty. A young woman, whilst waiting upon her, was seized with shivering and subsequent fever, went home and died in a week, it is said, of typhus fever. I did not see her, and only know from hearsay.

"An unmarried sister of Mrs. Bullas (Case VI) came over to see her, and arrived just before her death, on February 16th. She was seized on the 24th with severe herpes zoster of a malignant character, the blisters of which contained blood, or bloody serum, were surrounded with severe erysipelatous inflammation, followed by considerable sloughing, and attended with typhoid fever. Subsequently a large abscess formed in the breast, which was cured March 30th. She then soon got well. The sister-in-law of Mrs. Downes, the first case, was taken ill of typhus fever a few days after Mrs. D.'s death, and was in a state of considerable danger for some time, but recovered. The whole of these cases, whether erysipelatous or not, form a chain of connection with each other.

"The probability of the identity of erysipelas and puerperal fever has been lately stated by Mr. Nunnely, of Leeds, in his work on erysipelas; but unless many diseases (such as typhus fever, &c.) are classed under that head, and consequently very great latitude is given to it, such an opinion must be quite untenable. It will be observed that many of the cases above related, which arose from the miasm of erysipelas or of puerperal fever, produced fevers of an ordinary or of a typhoid character, according to the condition of the patient at the time, influenced also probably by the more or less concentrated state of the poison. I am by no means disposed to confine the origin of puerperal fever to gangrenous erysipelas alone, though it is my firm belief it arose from it in the cases above related, for even in them it was produced from the matter of abscesses long after the disease had ceased to be gangrenous. I believe it may also readily be propagated from one individual to another, so that if a person

be unfortunate enough to attend a case of the kind, without great precaution, he may be liable to transmit it to others, whom he may be attending in the puerperal state. In many cases there is good reason to believe that it arises from attendance on post mortems, especially where there has been peritoneal inflammation. A friend of mine told me that he had no doubt but that in his practice it once arose from his having been called to a labour after the post-mortem of a fatal case of strangulated hernia; though in cases of this description there are often, probably, circumstances both of an erysipelatous and of a gangrenous character. I should also be disposed to believe that it may often be propagated by cases of erysipelas without gangrene, especially if accompanied by typhoid fever."

As to the treatment, Mr. S. observes, "It is plain that where death so constantly follows every variety of treatment, it can only be of very secondary importance to a knowledge of the origin of the disease, and to its consequent prevention. With regard to the above cases, they were severally treated according to the strength of the constitution, the inflammatory symptoms present, the rapidity of the typhoid, and low symptoms; and the degree of depletion was regulated by the consideration of these circumstances. I did not find that bleeding had any other effect than that of temporarily mitigating the severity of the disease; and it will be observed that it was only had recourse to from the arm in three cases, and these apparently the most likely to be benefited by it. Leeches were always of service in mitigating the pain, and, in one of the cases which recovered, were, with the assistance of a blister, the means of suddenly removing the tympanitis, which existed to a great extent. Calomel, which was only tried in large doses in the two last cases, seemed to be of essential service in arresting, and, though very temporarily, suspending the progress of the disease, and in each led me to hope for a short time that at last I had discovered a remedy; but its effects soon failed, and my disappointment has forced me to believe that, in severe cases of this fever, there is no remedial means that can be relied on, but that, as surely as the patient is seized with the full characteristic symptoms of the disease, she will almost as surely die. All the other remedies which were used, I scarcely set any value on. Of turpentine, as an internal medicine, I have a very unfavourable opinion; in two cases in which it was so employed, it caused intense sickness, and hurried on the sinking symptoms; as an enema, it was of service in removing tympanitis.

"Opium, at an early stage of the disorder, in a single full dose, is, I think, of use; and at an after stage, when the vital powers are flagging, it is of service in smaller doses, where there is much suffering; but it is by no means the same useful remedy it is found to be in ordinary puerperal peritonitis, or in those frequent cases of severe spasmodic pain which threaten inflammation. Fomentations, common or medicated, are always of some service, as are mustard plasters, and occasionally in mild cases blisters, where you have time; but in most of the cases which occurred to me, the period for treatment was so short, that any means which required time for their action, were too slow to do good. The turpentine fomentation, in having a speedy blistering effect, seemed to be the remedy most generally applicable as a counter-irritant. Being in great dread of propagating the disease, I made no very earnest endeavours to obtain examinations after death, being satisfied that the subject on this point was already too well studied to have any light thrown upon it by my humble means."

59. *Management of Cases of Prolapsus of the Funis.*—The following are Professor OSIANDER'S, of Göttingen, conclusions relative to this subject.

"1. Manual intervention is not required in every case of prolapse of the funis beyond the os uteri. It very frequently happens that the head passes beyond the funis, and that labour is terminated without any accident, though the case is left entirely to nature.

"2. When the conditions are favourable, that is to say when the child is of moderate size, when the structure of the parts is natural, and the pains are effective, it is best to leave the case entirely to nature. Moderate pressure on the

cord is seldom dangerous in these cases any more than when the funis is twisted round the child. At the most, if the process of labour is slow it may be proper to apply the forceps.

"3. Turning should not be resorted to unless some other circumstance than the prolapse of the cord renders it necessary. The old maxim that in all cases of funis presentation the child is to be turned is as ill-founded as it is mischievous.

"4. Cessation of pulsation in the cord is not a certain sign of the death of the fœtus, and is rather an indication for hastening delivery than a reason for neglecting the condition of the child.

"5. Attempts to replace the prolapsed funis within the uterus are seldom indicated; but on the contrary are almost always fruitless, while they are likely to interrupt and arrest the process of labour. If, however, the funis is low down in the vagina, or has descended out of it, it must be replaced, and retained within it by a sponge, a compress, or other means, since the action of the cold air speedily interrupts the circulation in the cord and occasions the death of the fœtus.—*British and Foreign Medical Review*, Oct. 1842, from *Neue Zeitschrift für Geburtskunde*. Band xii. Heft i.

60. *Extraordinary Case of Twins*.—DR. JAMIESON, of Dublin, relates the following case in the *Dublin Journal of Medical Science*, for September, 1841.

On the 3d of April, 1841, he was called to visit a lady 30 years of age, in consequence of severe pain in the abdomen, recurring at uncertain intervals, and lasting generally about five minutes at a time.

The author discovered a firm hard tumour, reaching as high as the umbilicus, which softened on the subsidence of pain, and appeared to be the gravid uterus. On applying the stethoscope, Dr. Jamieson thought he heard a placental murmur in the right iliac fossa; but the lady said it was impossible she could be with child, as she had been confined so recently (seven weeks before), and was at present nursing. As, however, Dr. Jamieson was convinced that the tumour was the uterus, and that it was acting to get rid of something, he ordered a dose of oil and retired to another room, in order to explain to the husband that he believed there was some foreign body in the uterus of his wife.

The author was hurriedly summoned, while engaged in this explanation, to the apartment of the lady: and on examining per vaginam, found the head of a small child presenting, with the membranes entire, which, on the occurrence of another pain, was expelled together with the placenta. The child was dead, and seemed to be about the sixth month of gestation; and though shrivelled and dark, was not at all putrid or decomposed. It was between eight and nine inches long. The mother was of course greatly surprised. She had been confined of the other twin on the 13th of February. Consequently the dead fœtus must have remained in the womb for forty-nine weeks.

61. *Short Funis*.—DR. J. B. THOMSON relates in the *Lancet*, June 4, 1842, a case in which the funis was only seven and a half inches long.

Mr. Stone has met with a case in which the funis was still shorter, being only six inches; and Mr. WM. COLLYNS, (*Provincial Medical Journal*, Aug. 6, 1842,) another, in which the funis was scarcely that length.

62. *Ante-version of the Uterus, reduced by position alone*. By DR. GODEFROY, Professor of Midwifery in the Medical School of Rennes.—Madame F., mother of two children, and having a large pelvis, was seized in August, 1839, while in the fourth month of pregnancy, with a sense of weight and dragging sensation in the groins and pelvis, and a constant desire to void her urine. When she was seen by Dr. G., the mucous membrane of the vagina was protruded beyond the vulva, from the strong efforts that she was making to empty the bladder. A catheter was introduced, which drew off about a wine-glassful of urine. Upon practising the toucher, the neck of the uterus was found situated upwards and backwards, and below the sacro-vertebral angle; in front, a round tumour was

felt pressing upon the pubis. The patient having been placed as for a case of laborious labour, the uterus was restored to its natural position by introducing one fore-finger into the vagina and the other into the rectum. In the following year, at the same period of pregnancy, she was seized with similar symptoms to those described above. Dr. G. not being able to attend upon her immediately, he recommended her to be placed in a position, which, in all probability, would relieve, if not effectually cure her. He advised her to be put on the side of the bed, with her head and hands on the floor, and with only the anterior part of the thighs and legs resting on the bed. He says, that in this position the intestines are drawn towards the diaphragm; that the pelvis is consequently emptied, and the uterus, being no longer pressed upon, resumes its normal situation. And this is what happened to the lady in question. She had scarcely been fifteen minutes in the above posture, when all painful sensations subsided. She then went to bed, where she was when Dr. Godefroy saw her, two hours after her attack. At this time she only complained of a feeling of weariness in the pelvis, with heat of the external parts. He did not practise the toucher. Being so delighted with the result of this case, he determined to try the effect of the same position in the next case that he saw, which was not till October, 1841. CASE 2.—Madame C., between three and a half and four months pregnant of her first child, 33 years, and well formed, was seized, on the 27th October, 1841, with a feeling of weight in the pelvis, and with frequent calls to make water. She went to bed, but did nothing else. She was able to get up next day. Dr. Godefroy was sent for on the morning of the 29th, as she thought she was going to have a miscarriage. He found similar symptoms to those already detailed in the first case. Upon examining her by the toucher, the neck of the uterus was felt behind and towards the curvature of the sacrum, while the fundus was in front and behind the pubis. As the bladder did not appear full, the catheter was not introduced. The patient was placed in the position recommended, viz., her head and hands on the floor; with the front part of the thighs and legs resting on the bed. Dr. G. was witness of the progressive improvement observed in this lady; at first the feeling of weight in the pelvis diminished, and then the desire to void urine ceased. As the position was very fatiguing, she was supported by the shoulders. She was kept for twenty minutes in this posture. Upon her lying down again in bed the uterus was felt by the toucher to be in the natural position. He is anxious that his medical brethren should adopt the same mode of treatment in similar cases, until it can be seen whether a more extended trial will sanction its employment.—*L. & E. Month. Jour. Med. Sci.*, March, from *Annales d' Obst. &c.* Jan. 1842.

63. *Stony Placenta*.—A singular case is recorded by Madame BUISSEAU D'AU-THÉZ, a midwife, at Paris, under this title. Her patient was delivered in February last of a living female child, which did well. The delivery was somewhat retarded by the size and consistence of the placenta. It was the patient's third labour.

The placenta was perfectly round; the cord was attached to its centre, and the membranes could be readily separated as far as the root of the cord. The diameter was seven inches in every direction, and it was an inch thick in the centre. The vessels, instead of ramifying, as in ordinary cases, terminated in two distinct sinuses for the two orders of vessels. The fetal surface did not present any remarkable appearance, but on that which had adhered to the uterus were remarked distinct lobes, formed by a concrete matter which resisted the scalpel; the colour and consistence being that of gray plaster. In order to ascertain how far the spongy substance was filled with this composition, the placenta was washed, and it was ascertained to be formed entirely by distinct concretions, larger at the edges than at the centre, but sufficiently free to allow of their separation. The accomplishment of the delivery without very great difficulty was owing to this mobility of the concrete lobules.

The patient had not experienced any of the strange whims which infect preg-

nant women, nor had she suffered from gout, rheumatism, or disease of the heart.—*Prov. Med. Jour.* Oct. 1, 1842, from *Gaz. Med. de Paris*, July, 1842.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

64. *Marriage of the Deaf and Dumb.*—A curious case of opposition to the marriage of a deaf and dumb girl has just been decided by the supreme tribunal at Berne. It appeared, that Anne Luthi, the person in question, an exceedingly pretty young woman, of twenty-five, and possessing a fortune of 30,000 francs, had been placed in a deaf and dumb institution near Berne, where she had received an excellent education. On her return home to Rohrbach, her hand was demanded by a M. Brossard, who had been deaf from fourteen years of age, and had been employed for some years as a teacher, in the institution. He was thirty-two years of age, bore an excellent character, and had saved some money out of his salary. As Art. 31 of the civil code of Berne enacts, that deaf and dumb persons could not marry without having first obtained permission from the tribunal, Mdlle. Luthi made application in the usual manner, but was opposed by her relations and by the commune in which she lived. The grounds of opposition were, that Brossard had taken an undue advantage of his position, in the institution, to captivate the young girl's affections—that it was to be feared that the children would labour under the infirmity of the parents—and that the latter could not, in case they were like other children, give them the cares required for a good moral education. The objections relating to the children being proved, by the testimony of medical men, to be perfectly chimerical, and letters being produced from the female herself, admirably written, breathing the utmost affection for Brossard, the court decided that as from their infirmity being mutual, and their consequent habit of interchanging ideas by signs, they were well suited to each other, and there were good grounds for expecting that the female would be happier with Brossard, than with any other person, no just grounds for opposition existed, and permission must accordingly be given for the marriage.—*Athenæum*, July 30, 1842.

65. *Poisoning by Muriatic Acid.*—As cases of poisoning by this acid are comparatively rare, the following from Mr. Herrship's work on affections of the stomach, may be here stated. A young man, in a fit of depression, swallowed half a tea-cupful of a solution of tin in muriatic acid. In five hours, I found him in severe pain at the stomach, with restless anxiety, thirst, and copious vomiting of stiff glairy mucus. Pulse 100, very small, rather hard. A full bleeding was taken from the arm, and oily diluents freely given. Dr. Hooper directed a blister to the stomach, aperient medicines and an emollient enema. The next day, the medicines had operated, but the symptoms were worse. Dreadful pain at the stomach, restlessness, astonishing quantity of mucus rejected, quickness and lowness of pulse all greatly aggravated. On the third day, the rapid pulse was scarcely perceptible, the other symptoms continuing, in the evening delirious, and in the night he died. *Post Mortem.* I found the mucous lining of the œsophagus somewhat inflamed. The stomach externally violently inflamed, internally thickened and pulpy, was excessively vascular, and filled with a stiff ropy mucus. A few inches only of the duodenum also were inflamed, yet no spasmodic contraction was observed.—*Quoted in Medical Times*, October 9, 1841.

66. *Asphyxia.*—Dr. Richardson detailed a case at the meeting of the British Association, at Manchester, which is interesting from its cause and history. It occurred in the operations for clearing the deck of the Royal George. The divers are equipped with a water-proof dress of Macintosh fabric, with a metallic helmet resting on the shoulders, to which is attached a tube, through which air is forcibly pumped from above. The divers generally remain below from half an hour to an hour or more, without any inconvenience, and return with

their inner dress of flannel perfectly dry. On the 4th of October, 1841, while Roderick Cameron was below, the air tube burst near the pump; he was instantly hauled up by the safety line attached to him; the first disagreeable sensation he experienced was an unusual pressure of the helmet and leads against the collar bone and chest, followed by an urgent feeling of suffocation, after which he speedily lost all sensation; he was drawn up in a little more than one minute; and a few seconds elapsed before the helmet was removed. He remained lying on the vessel's deck, on board which he was drawn, for about a quarter of an hour, when he showed signs of consciousness, and was able to speak; in about an hour he was received into Haslar Hospital. The pain in the head, dimness of sight, soreness of throat, and other effects of the accident disappeared in four or five days.—*Athenæum*, July 30, 1842.

The Medico-Chirurgical Review, for October, 1842, adds some additional information concerning this interesting case. A little blood only escaped from his nose and none from his ears and mouth. His head, neck and eyes, were however ecchymosed, and this continued for several weeks. "At the expiration of a month, the ecchymoses under the conjunctivæ, which remained the longest, has disappeared, and undaunted by the perilous accident which had jeopardized his life, he returned to his work as a diver, which occupation he still fearlessly follows."

Mr. Liddell, the author of the above communication, gives the particulars of a similar and later case:

John Williams, aged 26, of great strength and activity, but addicted to habits of intemperance, had been employed for two summers on the wreck of the Royal George as a diver, and is considered one of the most expert workmen. On the morning of the 11th of July, 1842, while clothed in his submarine armour, he was engaged at the bottom of the sea, at the depth of eighty feet from its surface, in fastening an iron chain round a block of wood that was imbedded in the stiff mud; which task, after an hour's labour, he had just completed, when the flexible tube that supplied him with air, suddenly burst above water, with a loud hissing noise, which was distinctly heard at the distance of fifty fathoms. The persons stationed at the air tube immediately perceived the accident that had happened, and one of them closed the hole in the tube with his hand. Williams was promptly hauled up, but his armour got entangled in the heavy rope ladder, by which the divers descend, and he and it were pulled up together, in the space of about a minute and a half, from the occurrence of the accident.

On removing the helmet from his head, blood was seen running in a stream from his ears, nose and mouth. His face and neck were swollen and discoloured; he looked faint, but was sensible. In this state he was conveyed to the hospital, where he arrived in an hour after the accident. His face then was one mass of lividity, his neck was excessively swollen, bloated, and suffused with livid coloured blood. Dark patches of ecchymosis that did not coalesce existed over the clavicle and shoulders, with intervening spaces of skin of the natural colour. The lower part of the neck, which had been covered with the flannel and India rubber dress, was mottled black and white; the dark ecchymosis being raised in lines, with slight streaks of white skin interposed. The livid discoloration of the face extended upwards to, but did not pervade the hairy scalp, where it terminated abruptly, nor were any spots seen below that part of the chest which was covered with the helmet. The lining membrane of the cheeks, under the tongue, over the fauces and pharynx, as far as the eye could reach, but especially over the tonsils, was black with ecchymosis. The conjunctivæ, where they are uncovered by the eyelids, and particularly round the margin of the corneæ, were turgid with black blood. He vomited some blood before he reached the hospital and he afterwards made occasional efforts to vomit, apparently from the accumulation of blood in the fauces, which blood, he now and then expectorated. The hemorrhage had ceased from the nose and ears, which were still covered with clotted blood. He was perfectly sensible, but seemed drowsy; pulse 76, of natural strength; breathing interrupted by frequent deep and involuntary sighs.

Lieut. Hutchinson, who was present when the accident happened, and who accompanied Williams to the hospital, said that the swelling of the face and neck had much increased, and the lividity had much deepened, during the hour that had elapsed since he left the hulk.

In the course of the same day, the lividity of the nose and point of the chin vanished, and those parts resumed their natural colour. The colour of the face too became much paler, in proportion as the vessels recovered their freedom and diameter; but there were large patches of extravasated blood in the eyes, mouth, face and neck, which could only be removed by the tedious process of absorption. On his admission, warmth was applied to his extremities; some warm tea was given him, which he swallowed with the greatest difficulty; he had a turpentine enema, and in the course of the day, twenty ounces of blood were taken from his arm. The following morning a senna draught was prescribed. He has complained of occasional headache and dimness of sight, but of this, at the date of the report (August 8) he was now free. The swelling and ecchymosis of the face and neck have daily diminished, and these parts have now attained their natural size and colour, showing that they were swollen, on his admission, to twice their natural size. The ecchymosis under the conjunctivæ were very tardily absorbed, and minute clots were visible for three weeks around the union of the cornea and sclerotic coat.

Mr. Liddell refers to a third case, similar to the above, of a diver at the wreck of the frigate *Thetis*, in South America. Here too, the air tube burst, and the individual became entangled with the bell, so that there was some delay in bringing him to the surface. When he reached it, his face and body were blackened with ecchymosis down to the *waist*. This discoloration gradually went off in the course of a month, the blackness of the balls of the eyes being the last to disappear.

These curious and strikingly similar effects are supposed by Mr. Liddell to arise from the sudden removal of the compressed air, and the consequent exertion of the pressure of the superincumbent water on those parts of the body which are not covered by the unyielding helmet. In the case of Williams, this pressure at the moment of the accident, is supposed to have been nearly equal to the weight of three atmospheres, and which was counteracted and the equilibrium preserved, by throwing air through a forcing pump of great power, along a flexible tube into his helmet. When the tube burst, the equilibrium was destroyed. The head was protected by the strong helmet, and did not collapse from the pressure of the circumambient water, which now acted on the rest of the body, with a force equal to two atmospheres, and produced a feeling, as he expressed it, as if he had been crushed to pieces by his dress. The blood thus driven from the extremities and from those parts of the body that were not covered by the helmet, was forced into the vessels of the head and neck, (as it is into a part of the skin placed under a cupping glass) some of which blood remained in the vessels and disappeared in a few hours after the accident, but a large portion was extravasated in the loose textures in which it had been forcibly driven.

67. *Action of Chlorides upon Protochloride of Mercury (Calomel.)* By M. MIALHE. (From the *Annales de Chimie et de Physique*, June 1842.) The following experiments have an intimate bearing on one of the most interesting subjects in legal medicine, viz: the chemical changes induced in the principal mercurial preparations, when they are taken internally. It is evident, also, that their administration as medicines must be modified by the facts ascertained.

M. Mialhe remarks that Capelle in 1763 first observed the danger arising from a mixture of calomel and sal ammoniac; Proust afterwards proved the conversion of calomel into corrosive sublimate by the action of the alkaline chlorides. After mentioning other authors, M. Mialhe refers to a note of his own, contained in the *Journal de Pharmacie* for February, 1840, in which he details experiments, proving first, that calomel acted upon by the alkaline chlorides always yields more or less corrosive sublimate. Second, that it is to this partial conversion

that calomel owes its medicinal powers, and he afterwards mentions different authors who have confirmed his opinions.

He then relates various experiments which he has since performed, to determine the proportion of corrosive sublimate, resulting under certain conditions from this action: 1. 1000 parts of distilled water, 60 of common salt, 60 of sal ammoniac and 60 of calomel (prepared by sublimation) which had been perfectly washed, were mixed and allowed to react for twenty-four hours, the temperature varying from 68° to 77° Fahrenheit; there was produced 0.6 of a part of corrosive sublimate. Similar experiments were made with calomel, prepared by precipitation, with precisely similar results. 2. 1000 parts of the assay liquor (the alkaline chlorides just enumerated,) had 60 parts of calomel, (a la vapeur,) digested in it for 24 hours, at a temperature varying from 104 to 128 Fahr., and 1.5 of corrosive sublimate was produced. When precipitated calomel was substituted, a mean was yielded of 1.7 of corrosive sublimate. "This chemical result confirms the opinion of therapeutists, who have always considered the calomel obtained by precipitation, as sensibly more active than that prepared in the dry way."

M. Mialhe subjoins the results of numerous other experiments on points connected with this investigation. It will be sufficient in this place, to mention his influences, as supported by these. 1. The quantity of sublimate produced is proportional not to that of the calomel employed, but to that of the alkaline chlorides. The amount of sublimate obtained does not increase, with the increased quantity of calomel that is added, but actually does so, if a large proportion of the alkaline chlorides be employed. 2. The degree of dilution of the alkaline chlorides has a decided influence on the quantity of sublimate produced. 3. It was proved by direct experiments, that the presence of neutral organic bodies does not hinder the conversion of calomel into corrosive sublimate; on the contrary, dextrine favours the change, sugar and albumen probably do not modify it, and lastly, lard and gum arabic very evidently retard it. 4. The presence or absence of air modifies the results. When air is present, calomel and the alkaline chlorides produce three times as much sublimate as when they react without it. 5. Calomel may be very partially converted into sublimate by the influence of boiling distilled water deprived of air: 1000 parts of boiling distilled water and 60 parts of calomel, were kept at 212° for an hour. After cooling, the water was found to contain 0.1 part of sublimate.—*London, Edinburgh and Dublin Philosophical Magazine*, October, 1842.

68. *On Pulmonary Emphysema, as a cause of death.* By Dr. PRUS.—The following is a report on this memoir, read before the Royal Academy of Medicine, of Paris, in May, 1842, by Messrs. HUSSON, BOUILLAUD, ADELON, and BOULEY.

Dr. Prus commences by remarking that Laennec has indicated pulmonary emphysema, as one of those diseases which require further investigation. Piedagnel, Leroy D'Etiolles, Louis and Stokes have responded to the appeal. Two of the conclusions of Louis, are in his opinion, irrefragable, viz. 1. That pulmonary emphysema when once established, advances and develops itself slowly in some cases, and rapidly in others. 2. That the extent of this disease is generally in proportion to its duration.

Still the subject is far from being exhausted, and on the point which he particularly notices, the following diversity of opinion exists. Laennec and Louis declare distinctly, that pulmonary emphysema is never mortal; Magendie, Breschet, Piedagnel, Leroy D'Etiolles, Ollivier D'Angers, Devergie, and Boivier, are of a contrary belief.

Facts alone can determine this difference. We already possess numerous cases showing that the disease may exist for a greater or less length of time, without rapidly abridging the duration of life. But these negative facts cannot put aside the positive instances, which prove that death more or less rapid may ensue from this form of emphysema. It is true, that these are few in number, and restricted probably to a case of Magendie, published by Breschet in the

Dictionnaire des Sciences Medicales, and another by Ollivier D'Angers. Mr. Prus has, in addition to these, observed no less than eight cases at the Bicetre and Salpetriere, and which ought to exercise a decided influence in resolving a question important in pathology, but still more so in legal medicine.

If pulmonary emphysema, whatever be its degree of development, or the rapidity with which it has advanced, cannot cause death, then medico-legal observers should so understand it, and not attribute to the disease effects which it cannot produce; but if the contrary be the fact, then its presence in a medico-legal dissection should be carefully noted, and dwelt upon, lest peradventure, we ascribe to a crime, the natural effects of a disease as yet imperfectly understood.

M. Prus adduces the following as illustrative of the necessity of more settled views on this subject. An individual was found dead on the highway. The physician charged with the examination of the body, could discover no lesion, except a considerable pulmonary emphysema. Being unwilling to decide on this himself, and not finding any assistance in works on legal medicine, he addressed a friend in Paris, to inquire whether the point had been adjudicated by medical inquirers. The answer was in the negative.

M. Prus expresses the hope that the facts adduced by him will aid in determining the truth. Previous to stating these, he deems it necessary to settle the true seat of the disease. Laennec and Louis allow of two species; the one the most frequent consisting in a dilatation of the vesicles; the other uncommon, and in which the air has passed into the interlobular and subpleural cellular tissue. Our author is of opinion, that the name should be confined to the latter of these, and that the presence of air in the intervesicular, interlobular and subpleural cellular tissue, constitutes three degrees of the same disease. The dilatation of the pulmonary vesicles, if it does occur, is certainly much more rare and indeed much less considerable, than has been said and repeated, without sufficient examination, since the investigations of Laennec.

To this succeeds the narrative of ten cases, which, however, according to the reporters, were too long to be read in detail before the Academy. Along with these he gives a full sketch of the symptoms and appearances on dissection, noticed by him in those to whom the emphysema proved fatal. It is to be regretted that these are not stated in detail. Some of his inferences are, however, mentioned.

Asthma, properly so called, he considers to be distinct from pulmonary emphysema. The latter may occur altogether independent of the former, although it is frequently the consequence of asthma.

The blood in persons who die of emphysema has peculiar characters. It is always fluid, blackish, and oily; and in these respects, corresponds with the blood of those who die asphyxiated.

M. Prus also quotes Floyer and Dupuy, to prove that the emphysema often noticed in broken-winded horses, is similar to the disease in man.

He concludes his memoir by discussing the observations made by Morgagni, Ruysch, Van Swieten, Floyer, and Storck, on pulmonary emphysema; and shows that the three last had a perfect knowledge of its seat and its danger. Storck in particular, recognises a *phthisis seu consumptio aerea*.

This phthisis is characterised by an incessant difficulty of breathing; by the thorax being arched at the part corresponding to the emphysema; by the excessive sonorousness of this part, and the diminution of the respiratory noise in the subjacent portion of the lungs; by frequent threatenings of instant suffocation, accompanied with blueness of the face and extremities, and finally, by asphyxia and death. On dissection, the intervesicular, interlobular and subpleural cellular tissue is found so distended with air, as to prevent the circulation of the blood. Sometimes also, true air cavities (*cavernes*) are seen, either on the surface of the lungs, or in their interior. The blood is every where liquid, blackish, and oily.

The principal conclusions of the memoir of M. Prus, are the following: 1. The seat of the disease. The peculiar views of the author on this, have been already stated. 2. Pulmonary emphysema may be a lingering disease, and thus

give sufficient indications of its fatal termination. 3. It may cause death rapidly, and indeed suddenly. And it is in instances of the last description, that the investigations of the medico-legal examiner are particularly demanded.—*Bulletin de l'Académie Royale de Médecine de Paris*, May 24, 1842.

69. *On Pulmonary Emphysema as an Anatomical proof of death by Asphyxia.* By ALPH. DEVERGIE.—The recent and interesting notices of Dr. Prus, on this disease, have recalled to our recollection the above communication of Devergie, which was published in April, 1841.

Our author commences, by stating, that in the drowned, who die from asphyxia, the lungs are observed to be greatly distended, and seem as if compressed together in the cavity of the chest. On opening it, they instantly expand. Sometimes they are so much developed, that after dividing the anterior mediastinum, their edges lap over each other.

For a long time the cause of this phenomenon was supposed to be putrefaction, but an attentive examination of the pulmonary tissue in the drowned and asphyxiated, during every season of the year, and particularly in winter, has convinced him that it should be ascribed to pulmonary emphysema. If we carefully notice, in such cases, the tissue of the lungs, we shall see all the cells enormously distended, and communicating with each other. This induces crepitation—a phenomenon unknown in the healthy state. A gentle pressure on these projecting points will readily dislodge the contained air, and the parts then resume their natural appearance.

I consider (says Devergie,) that pulmonary emphysema occurs more frequently than is generally supposed, and am convinced, that even a slight obstacle to the exercise of respiration, may induce it. It manifests itself during the struggles that attend the last moments of the asphyxiated, whether from drowning or from carbonic acid, or pulmonary congestion, or indeed any cause of death that is capable of impeding the breathing. It is produced during the last inspiratory efforts, or in the agonies which attend the expulsion of water from the trachea of the drowning.

I do not assert that this always attends death from emphyxia, I only say that it very frequently accompanies, and hence when present, is a striking proof of the kind of death. And the frequency of its occurrence first led me to doubt its being a cadaveric phenomenon. In two recent cases, MM. Jadelet, and Roger, (de L'Orne,) have also noticed it. One was in a female aged 47 years, who, after a hearty supper with her paramour, and a gay evening, retired to bed with him. She was seized, during coition, with a sensation of suffocation, leaped from the bed, and after violent agony, soon died. On dissection, there was found a serous congestion of the pulmonary tissue with general emphysema, and froth in the bronchiæ and trachea. This female had never laboured under short breathing, on the contrary, she was very lively and almost always singing.

The second was a very different subject. A man of 40 years of age, addicted to liquor, was knocked down by a loaded cart; one of the wheels passed obliquely over the left thigh, and then crushed the calf of the right side. The femur was fractured, and the muscles of the leg and thigh torn, but the chest was not injured. Yet on opening the body, there was pulmonary congestion, with general emphysema; the pleura, particularly at the case of the lungs, was raised by bubbles of air, forming numerous swellings. Here then, are two instances, in which either spasm, from high excitement or pain, induced the development of this disease.

Andral, Ollivier, Piedagnel, and Pillore, have mentioned similar instances.

Still, physicians engaged in a medico-legal examination, should recollect that putrefaction may also induce it.—*Annales D'Hygiène.* T. R. B.

70. *Death by Strangulation, and an attempt to conceal the crime by burning the body?*—I have, in my work on Medical Jurisprudence, referred to several cases resembling the one now to be stated, but the truths which they inculcate will bear frequent repetition.

Moral Circumstances. At the Yorkshire Assizes, in England, in March, 1842, Jonathan Taylor was tried for the murder of his wife. He had lived on a farm of Lord Wenlock; but four years previous, he formed an illicit connection, and left his wife, and the farm was made over by his landlord to his family. He ultimately returned at times, and was, on such occasions, employed in day labour on the farm. On Tuesday, October 26th, all the family left home at nine o'clock to go to work, but the wife. Early on that morning, the husband had also left, saying that he was going to Selby. At twelve o'clock, two of the daughters returned home, and then found the wife quite dead, lying upon the hearth near the fire, upon her face, and apparently in a burning state, her clothes being on fire, and the *lower part* of her person very considerably burnt. A *bunch of keys was found lying under her*. Medical men were sent for, and an examination was made, the details of which will be presently given. The deceased had been seen to go to a drawer at eight o'clock that morning, to look at some silver (about £3,) which she had kept there. She was seen to lock it, and the drawer was found locked; but the money was gone. Lord Wenlock's agreement with the family, and a policy of insurance on the stock were also missing. The keys, therefore, which were found lying under her, must have been used to procure the money at least, and it was remarked, that notwithstanding the fire, they were perfectly bright. The husband had also been accidentally spoken to by a miller in the house, at half-past nine that morning. It was proved that he reached Selby at half-past eleven.

Post mortem Examination. Mr. Anderson found the following appearances, about twenty-nine hours after death. The whole of the head and face extending down below the thyroid cartilage of the neck, was much swollen, and of a purple hue, including the ears; the eyes full, prominent and bloodshot; the mouth closed. Immediately below the swollen part of the neck, there were two dark brown, crackly and hard marks across the front part of the neck, and extending from these (to the left side especially, and more indistinctly to the right,) were slight indentations formed by pressure. The integuments of the head, particularly of the occiput, were swollen and distended.

The burns extended from the region of the liver on the right side, obliquely downward across the abdomen, to the left side, which was less injured. They extended some way down the left thigh, and down the right leg to the knee. Both hands were partially closed; the right hand was severely burnt; and the ends of the fingers with loss of substance and black. There were no material burns below the knee. There were some very slight burns on the back part of the right shoulder: there were no vesications containing *liquid* at or near any of the burns, and no swelling or inflammation on the *edges* of the burns.

On cutting into the scalp, which was divided from ear to ear, a large quantity of dark, fluid, and very thin blood flowed copiously away, and the scalp was much darker and more injected than natural. The portion corresponding to the external swelling was much thickened and injected, with *small coagula* in its substance, and there was some fluid blood between the scalp and the skull. On sawing through the skull, the blood flowed still more copiously. When the dura mater was separated from the skull, numerous points of blood issued from each. The brain also was highly injected.

Medical Opinions. The thickened, injected, and swollen part of the scalp on the back of the head, and its separation from the skull, indicated violence during life. This might probably have caused insensibility, but not death. The horizontal marks on the neck, with the external appearances, and those found on dissection, denote *strangulation*. It was found on cutting into the dark, brown, and crackly and hard marks on the neck, that several small blood-vessels were *inflammatorily* injected, and it is suggested that a hot substance may have been passed over these horizontal marks after death, in order to conceal them, and that thus their peculiar condition might be accounted for.

The nature of the burns, and all their attendant circumstances, seem to prove that the body had not moved during the process, and consequently that death must have preceded it.

The jury, without leaving their seats, found the prisoner guilty.

Although the above report is not drawn up in the most satisfactory manner, and might have been readily improved by a more familiar acquaintance with modern observations on the controverted points, yet the testimony appears to me to justify the verdict—*Lancet*, April 23, 1842. T. R. B.

71. *Presumption of Survivorship*.—I am indebted to a friend for the following translation of Dr. Krugelstein's Essay on the above subject, contained in *Wildberg's Jahrbuch der Gesammten Staatsarzneikunde*. T. R. B.

The cases in which the presumption of survivorship may arise, are the following. 1. When mother and child both die during delivery. 2. When many persons perish at the same time, as under the ruin of a falling building, or in a sandpit, or by an earthquake, or by the fumes of charcoal; or when many perish at the same time by shipwreck, or in drowning, when hurled together into an abyss; destroyed in a conflagration; simultaneously poisoned; dying at the same time from wounds; from hunger or from cold.

A. On the presumption of survivorship, when the mother and child die during delivery, two cases may arise. 1. The mother dies during delivery, without bringing forth the child. Here there may be a legal question, whether the right of inheritance of the child, though living, but not born, could be transferred to a third person.

2. The mother dies during delivery, and after her death, the child is born and found dead, no one having noticed its delivery.

In the first instance, it must be previously ascertained what was the cause of the death of the mother, and what the presentation of the child. If the latter is natural, and the parts exhibit mechanical impediments to delivery, and the mother died suddenly of a nervous affection, then the presumption is in favour of the child surviving. Opposed to this, in the opinion of Jörg, is the case cited by him, of a robust and remarkably healthy peasant woman, who for several weeks previous to the full time, suffered under *eclampsia gravidarum*, and during one of these convulsions, without its being noticed by any one, brought forth a dead child, with the placenta. He remarks, however, that *eclampsia* usually attacks only healthy, muscular, and especially full-blooded women; and that the probability of the death of the fœtus, either before or during delivery, is increased according to the length of time that the mother has been suffering under the disease.

But if the position of the child be unnatural, and especially if the funis has protruded, we may assume (and above all, if the pains have been violent,) that the mother died after the child.

In the case of a child full grown, and capable of living, born after the death of the mother, the proof by examining the lungs is conclusive as to its life. But if we find on it no signs of maturity, or of intra-uterine life, the presumption is in favour of the mother surviving, and particularly if there be marks of putrefaction in the fœtus.

B. When many persons are destroyed at the same time, the first inquiry is as to the cause of death, whether by suffocation, hunger, thirst, or wounds.

In cases of suffocation, we must notice the age, condition of body, sex, and the position of the dead. In reference to age, children and young persons survive old ones. Thus, in the earthquake at Calabria, a man and his wife, with their child, were entombed by a falling house. On being dug out, the parents were found dead, and the girl alive. The nearer the individual is to the age of childhood, the less is the necessity for respiration; and hence, persons of manly age, and if not asthmatic, but of sound lungs, survive the aged.

In reference to the condition of the body, the most important point is the state of the lungs. A person with sound lungs will easily outlive another, whose lungs are indurated or suppurating, since an unfrequent, but perfect inspiration suffices to preserve for a time, the functions of the lungs, while a short and confined one does not convey sufficient air to them. In reference to the situation, we assume, that those have died last, to whose lungs the access of air was in some degree possible.

But the possibility of obtaining respirable air, depends often on very different and apparently opposite circumstances. In a conflagration which broke out in this city (———) in 1808, two persons by the ruins falling down before the door of the cellar, were inclosed therein. One was an old man of seventy, and asthmatic, the other a very healthy person, aged about forty. The latter stood upright, and was near suffocating, in consequence of a fine smoke, which penetrated into the cellar and filled the upper half thereof; the old man, on the contrary, who had sat down on the floor, experienced nothing of this inconvenience. A man, who with his daughters and his mother aged seventy, retired into a cellar, on account of a fire, was suffocated with his children; while his aged mother was taken out the next day, half dead, gasping for air, but recovered and lived some years thereafter.

The nature of the masses which cause the entombment produce various effects, while the wounds depend on the masses causing them, the height from which they fall, and also the position in which the injured parts are. If large and heavy masses, ruins of walls, rocks, beams, stones, &c., fall upon the body, although the external wound may not appear severe, yet on dissection, we shall find the large blood-vessels, and the heart itself lacerated, and as the extravasated blood stains the parts, it is very difficult to decide whether the living man or his recent corpse was injured. Yet in the last case, the countenance is composed, or certainly not so distorted, as when a man has died in great terror and pain, and receiving very severe wounds.

Masses which do not cohere together, as earth, sand, rubbish, &c., press together the injured parts heavily, without generally breaking them. They also separate the extremities from the trunk, while they press on the space between, as, for example, between the arms and body. In the case of a female overwhelmed in a sand-pit, I found the body so much compressed, that it had scarcely half its natural thickness; besides this, however, there was no external injury observable. Occasionally portions of the falling masses press upon the openings of the softer parts, as in the eyelids, mouth, &c. The abdomen will be pressed together, and the contents of the intestines and bladder forced out, and sometimes even the contents of the stomach will be driven out through the mouth and nose.

Should we find such persons in various situations and positions, and in which it is evident that the deceased could not have been placed after death, as with the extremities drawn from the body, the arms upraised, or resting like the feet on the ground, or if we find under the finger nails, sand, &c., as if the sufferer had endeavoured to extricate himself, or if some of these foreign substances are seen in the mouth and windpipe, it is beyond a question that such an one must have survived another, on whom these marks are not found.

It was remarked of those who were entombed by the earthquake in Calabria, that the last position at the moment of death, of males, was an exertion of all muscles, in apparent struggling; while that of the female sex exhibited marks of the wildest despair. The latter, particularly, had their hands clasped above their heads. But when there were any children with the mother, she evidently thought only of protecting them, and with her own body endeavoured to ward off the danger. The father, on the contrary, seized his child and then opposed himself to it. Thus at Polestina, a mother with her two children, one a boy of three years old and the other an infant of seven months, was found. The infant was pressed to her breast, while her body was bent over the other, so as to oppose her back to the falling ruins. She held both children firmly inclosed within her arms, and in this position was found under the ruins.

The following case was submitted for the opinion of Pyl. Two married persons had gone to bed in good health. The woman had, however, been for some months feeble, and suffered frequently from faintness and headache. In the stove was found some charred oak wood, there was also an extinguished lamp in the room, but no smoke or vapour could be discovered, although the ventilator was closed.

Both were found dead, and as was supposed, from the fumes of charcoal. The

relatives raised a suit about the estate. Those of the husband contended that he must have survived, as he was of a robust constitution, and thus resisted the deleterious effects of the charcoal fumes longer than his feeble wife. Besides, his body was found warm in bed, while hers was cold. On the other hand, the friends of the wife objected, that it was not by any means certain that in all cases the weaker would yield sooner than the stronger. The body of the husband was probably covered with the bed-clothes, and thus preserved its heat, whilst it was ascertained that that of the female was naked. They relied, however, principally on the fact that the wife was only 20 years old and the husband 21, and hence she, as the younger, must have survived.

The following were the appearances externally and on dissection. Both were found in bed, the woman with folded hands, and body stretched out upon her back, while from the mouth issued a very fetid and rather bloody froth; and from the parts of generation light red blood, which also stained the bed-clothes. The husband lay near her also stretched out, but the upper extremities were stiffer, and his fingers drawn together convulsively. A blackish froth issued from his mouth. All the depending parts of the body in each was of a black and blue colour, but in neither could any mark of wound or injury be discovered. The odour of putrefaction was present, but the outer skin was firm.

On the dissection of the female, the abdomen was found greatly distended; the intestines exhibited some livid spots; the stomach was much enlarged, its upper part inflamed and the blood-vessels swollen, while the inner surface contained large black spots of the size of a dollar, on which the villous coat was abraded. The impregnated uterus was inflamed on its surface. The lungs were pale and collapsed, and in them and in the heart the blood was small in quantity, but frothy, black, and fluid. The blood-vessels of the brain were greatly distended with black, thin blood.

In the husband the appearances were similar, but more marked. There was more serum in the abdomen, and the stomach was more inflamed. The liver dark coloured, contained much fluid, frothy blood. The lungs were more swollen here and there discoloured, and the vessels full of blood. The heart contained more blood than in the female, but the condition of the brain was very similar.

The opinion of Pyl is to the following effect: While all cases of this description are extremely perplexing, and it is indeed impossible to arrive at a conclusion with absolute certainty, the difficulty is here increased by the fact that the period of death in these persons is uncertain, and that both, when found, were already stiff and cold. Their appearance was that of ordinary sleep, neither their countenance nor their limbs were distorted, and it is hence highly probable that both were deprived of life at the same instant. They were apparently suffocated during sleep, or otherwise we should have noticed some indication of an attempt to restore themselves. A few minutes at the most could have intervened between their deaths, and from the examination, it would appear that the effects on the husband were the most rapid and decisive, as shown by the state of the heart and lungs. Still, as the woman was the weakest, and was subject to faintings, she may have died first. In fine, it is impossible to answer the question in a positive manner.

Our author objects to this indecision, and remarks that Pyl should have made a distinction between the various effects of the fumes of charcoal, as they either first attack the brain and cause faintness and apoplexy, or else suffocation (choking rheum). Now, on the body of the wife, no marks of the latter were discovered, whilst they were on that of the husband, and the probability therefore is that the wife died first.

Metzger has also noticed this case, and declares that he would have decided for the earlier death of the wife.

(To be continued.)

72. *Detection of Lead in the Muscles paralysed by it.*—The following curious statement is taken from a paper in the *Medico-Chirurgical Transactions*, vol. xxv, by Dr. William Budd, on the Symmetry of Disease.

Paralysis of the hands in house painters and white lead manufacturers, does not depend on affection of the nervous centres, but is a purely local effect of the poison. This is evident from the limitation of the paralysis.

Lead has been detected in the palsied parts by direct experiment. This fact has been repeatedly ascertained by M. Tanquerel, and by MM. Devergie and Guibourt, and quite recently at King's College Hospital.

In a man who died there, under the care of Dr. G. Budd, of epilepsy from lead poisoning, and who also had wrist-drop, Mr. Miller detected lead in abundance in the paralysed extensors of the hand. T. R. B.

73. *Hydrated Proto-sulphuret of Iron, an Antidote to Corrosive Sublimate.*—M. MIALTHE laid on the table of the French Academy of Medicine the following note :

"It results from my experiments that the hydrated proto-sulphuret of iron, (an inert substance,) possesses the property of instantaneously decomposing corrosive sublimate, producing proto-chloruret of iron, and bisulphuret of mercury, both of which are quite innocuous. This precious property possessed by the hydrated proto-sulphuret of iron, causes me to proclaim it as an antidote to a terrible poison. I will in due time communicate my experiments to the Academy; but, in the mean time, content myself with stating a simple experiment by which its virtues can be easily tested. When a few centigrammes of corrosive sublimate are introduced into the mouth, a disagreeable and well characterized metallic taste is speedily experienced: if a gargle of the proto-sulphuret of iron be used for a few seconds, it causes it to disappear as if by magic."—*Lond. & Ed. Month. Journ. Med. Sci.* Sept. 1842.

(We noticed this antidote in our preceding number, p. 496; but the journal from which we derived the information, erroneously gave the hydrated proto-sulphate of iron instead of the sulphuret.)

74. *Cases of Asphyxia produced by the common Light Gas of Strasbourg.* By Professor TOURDES.—A family, consisting of six persons, retired to their home on the evening of the 31st December 1840, and not making their appearance either the next day, or the second day thereafter, the neighbours broke open their doors at half-past ten of the 2d of January. Five of the family were found stretched apparently lifeless on the floor, and the sixth on the bed. The father, forty-six years of age, gave some signs of life; the mother, forty-four years of age, uttered a few groans; the servant, eighteen years of age, was dead, cold, and stiff; two boys of fourteen and fifteen, were also cold and dead; the daughter, five years of age, was still warm. All means were used for their resuscitation, but the father died next day, and the mother alone recovered.

A strong smell of gas was felt when the doors were first opened, and there was no other apparent cause for the fatal asphyxia of the family.

The bodies were opened, and presented a marked similarity in the morbid appearances. In all, rose-coloured patches were noticed on the anterior and internal part of the thighs, and the dermoid and subcellular structures below these spots were found highly injected with blood. The membranes of the brain were injected with blood in all, as was also the substance of the brain itself, and especially its outer surface, which had a deep red tinge in consequence. In the father this was less remarked, as he had been freely bled several times. Clotted blood was found effused into the spinal canal between the membrane and bone.

In those who had fallen victims to the deleterious gas before being seen, a viscid whitish foam with bloody streaks through it filled the mouth, larynx, and bronchii, and adhered to the membrane. The pulmonary tissue was throughout of a bright red-colour. The blood was of a black colour, coagulated, and accumulated not only in the heart, but also in the aorta and chief veins. The liver was of a decided red hue, from its whole structure being gorged with blood in four of them, but it was pale and of a yellowish gray in the fifth. In four of them the bladder was distended with an enormous quantity of limpid urine. The cadaveric rigidity was well marked in all.

These morbid appearances present not the slightest similarity to those observed in two cases of asphyxia from the same cause, by Mr. Teale, and published in the eighth number of Guy's Hospital Reports, and in the 141st number of this Journal, p. 576. They resemble much more the cases of asphyxia resulting from the breathing of carbonic acid vapours, or the vapours arising from burning charcoal or coal; indeed, the appearances correspond very closely with those detailed by Dr. Golding Bird, in a paper on "Poisoning by the Vapours of Burning Charcoal and Coals," published by him in the same number of Guy's Hospital Reports, an extract of which is also given in the 141st number of this Journal.—*Ed. Med. & Surg. Journ.*, Jan. 1842, from *Gaz. Med. de Strasbourg*, Aug. 1841.

T. R. B.

75. *Researches on the specific Odour of the Blood.* By DR. C. TADDEI DE GRAVINA.—The object of the experiments whose results are given in this paper, was to test the truth of the well-known principle laid down by Barruel, and more or less acknowledged by other chemists, that the blood of each individual exhales an odour closely resembling that of the cutaneous perspiration, and so peculiar that the species, and even the sex of any animal from whom a given quantity of blood has been drawn, may be determined by it.

The details of the previous investigations may be found in any extended work on medical jurisprudence; those of the present included examinations of the blood of the ox, cow, and very young calf, an old and a very young hare, the goat, sheep, hog, horse and mare, dog, man and woman; and numerous species of birds. The blood of each was subjected to the action of pure sulphuric acid, and, in the exhalations that were then given off, the peculiar odour was in every case perceived. The only case in which the odour of one kind of blood could be confounded with that of another were those of the ox, cow, and sucking calf, and those of the hare and leveret; but in each of these cases the aromatic principle of the blood of the adult animal, though similar to, appeared stronger and more fragrant than that of the young, although the respective quantities of each, and of the sulphuric acid with which they were treated, were the same. Nor were the odours of the blood of a man and of a woman unlike each other, nor those of the horse's and mare's blood. The odour of the blood in each case was not different from that of the cutaneous exhalation of the several animals; and, in like manner, the blood of several cocks and hens, and of not a few pigeons subjected to the action of sulphuric acid, or left to putrefy, always exhaled a peculiar odour; in the former case reminding one of that perceived on entering a poultry-house, and in the latter of that of a dove-cote; odours which are also exhaled from the skin of the chest and under the wings of these birds. An odour, analogous to that of these parts of the skin, was given out under similar circumstances from the blood of thrushes, sparrows, linnets, goldfinches, woodcocks, and turkeys; and none of these had in its odour anything in common with that of the above-mentioned mammalia or of man, or of any of the species of birds. It follows, therefore, 1st. That it is true that the blood of every vertebrate animal has in it an odoriferous principle, identical in all the individuals of the same species, and similar to the odour of the cutaneous transpirations, or, more properly speaking, of that part of it which gives to each animal its characteristic smell. 2d. That the notion of those who pretend to recognise to which, among a number of individuals of the same species, a given portion of blood belongs, is false.

After obtaining these results, the author proceeded to the similar investigation of the blood of persons labouring under different diseases and under various other peculiar circumstances; but in none of these cases could he detect any corresponding differences in its odorous exhalation. From all these, therefore, his conclusion is, that neither the differences of age, of constitution, of temperament, of sex, of habit and customs, or of modes of living, nor diseases, medicines, or pregnancy, induce any change in the specific aroma of the human blood, but that it always preserves the same general odour; being only sometimes more fragrant and acid, or more garlicky and nauseous in some than in other persons.—*B. & F. Med. Rev.*, Jan. 1841, from *Ann. Univ. di Med.* Feb. 1840.

AMERICAN INTELLIGENCE.

Case of Salaam Convulsion. By S. A. BARTON, M. D., of Village Green, Pennsylvania.—A case of the above rare disease, only seven cases of which have been recorded in Europe, and, so far as I am informed, not any in the United States, recently came under my observation. Satisfied, from the peculiarity of the symptoms, that it is the identical disease described by Mr. West, (See this Journal for July, 1841, p. 187,) and one or two other eminent physicians in London, I am induced to write out a history of the case, and send it for publication in your Journal.

Mary E., daughter of T. E., of Delaware county, Penn., a robust, healthy, and intelligent little girl, seven years of age, was taken about midnight of the 26th of last November with fever, accompanied with pain in the head, and slight pain in the right side of the chest, and a short time after with convulsive jerkings of the extremities and head, so much so that her father, who represented the case to me, had some difficulty to hold her in bed. After the spasmodic twitchings had somewhat subsided, which occurred in a few moments, her feet were placed in warm water, and a small dose of ol. ricini administered; the spasms having entirely subsided, she was again placed in bed, broke out in a gentle perspiration, and slept comfortably until morning. She arose in the morning apparently as well as usual, and continued so until noon, when she was taken similarly as in the night, and I was summoned to visit her; when I arrived I found her but little amiss, playing with some pieces of money, the spasms having passed away for the time being.

Having had the case represented to me as above, her father at the same time expressing a wish that I might see her in one of her "spells," I remained near an hour without prescribing, as she appeared to be entirely free from disease, when she was taken with a slight spasm or convulsive jerk of her *extremities forward*, and a *bowing* of the *head*, with *instantaneous relaxation*, which were repeated at intervals of a few seconds, accompanied with a quick expiration and noise, such as would be produced by a sharp blow upon the epigastrium. The spasms increased in intensity for perhaps ten minutes, at intervals of from ten to twenty seconds, instantaneously relaxing in every instance. The peculiar nodding or bowing motion of the head was striking, inducing Mr. West to give it the name of "Salaam convulsion."

In the case of Mr. West's son, there was entire consciousness throughout the disease; in the above case, also, the mind was not in the slightest degree affected; immediately after relaxation of spasm, the child would talk, laugh, and attend to some play-things she held in her hands, as though nothing was the matter. The motions of the head and extremities were *constantly* forward and approaching each other.

The case presented an aspect so novel to me, having never noticed a dis-

ease similar before, that I was at a loss to decide upon the plan of treatment. Supposing, however, it might depend upon acrid ingesta, or perhaps worms, I prescribed a brisk cathartic, and ordered the child's feet to be placed in the warm bath. In about twenty minutes the convulsive jerking had entirely subsided; she left the nurse's lap, ran about the room, playful and cheerful, demanded some food, which was given her, and of which she ate with good appetite.

The following morning I again called to see her; the purgative had operated freely; had had no return of spasms; apparently as well as usual, and has continued well up to the present period.

About one year since she had a similar attack, as I learned, and was visited by my friend Dr. T. Young, upon which occasion the spasms gave way upon the exhibition of a cathartic, but was followed by fever of several days continuance. Remarks upon its pathology must of course be speculative.

Notice of a Malignant Epidemic which prevailed in the Lying-in Department of the Philadelphia Hospital (Blockley) in March and April, 1842. By M. W. WILSON, M. D., Resident Physician. (Communicated by R. M. HUSTON, M. D., one of the attending Physicians.)

During the months of March and April of 1842, a malignant epidemic prevailed in the Lying-in Department of the Philadelphia Hospital, which proved fatal to several patients, and was not arrested until the patients were removed to another part of the building.

For some time previous to the commencement of this epidemic, all diseases met with in the hospital had assumed an adynamic character. Typhus fever was of frequent occurrence and in many cases it proved fatal, more particularly when the patients were far advanced in life. Erysipelas had also been epidemic, and several cases had occurred in the patients in the lying-in department. When the epidemic of puerperal fever commenced, that of erysipelas was on the decline, it however still existed.

The epidemic which prevailed among the parturient women, commenced about the middle of March, and continued until the latter part of April, when the wards were abandoned, and nearly all the patients left the house. During the time above specified, thirteen women were brought to child-bed in the white lying-in wards, nine of whom had an attack of the fever, and to six it proved fatal. In the black lying-in wards there were six births, and but one woman had an attack of the fever, and she died. This case presented some anomalies and will be referred to hereafter. Two other women had more abdominal tenderness than usual, and some fever, but these symptoms disappeared after the removal of the patients to separate wards.

Of the thirteen children that were born in the white lying-in wards, one was still-born, and five died about a week after birth with peritonitis. The mothers of five of these children, including the still-born child, had an attack of puerperal fever, three of whom died, while the mother of the sixth escaped the disease entirely. The seven remaining children lived.

The disease usually commenced from two to four days after labour, and was ushered in by a severe rigor. In one case the rigor commenced immediately after the termination of labour. As soon as the patient reacted from the chill, the characteristic symptoms were observed. The countenance became very anxious, and expressive of pain; there was much abdo-

minal pain and tenderness, tympanitis, and an entire suppression of the lochia. The tongue became red and dry at the tip and edges, and covered in the centre with a yellowish coat. The pulse immediately rose to 90, and from that to 120 per minute. In two cases where it did not exceed 90, it was full and hard, but in the others, when it exceeded 110 per minute, it was small and slightly corded, but readily yielded to pressure under the fingers. The pulse increased in frequency as the disease progressed. The pain of the abdomen during the earlier stages, came on in paroxysms, leaving the patient quite free from it in the interval. But as the disease advanced, the paroxysms became much more frequent, and in the latter stages the pain was constant. The tenderness of the abdomen was so great in some cases, that the patient would scream in agony from the gentlest touch of the hand, while others, particularly in the early stage, were much relieved by equitable but firm pressure over the abdomen. The abdomen became enormously distended in the latter stages; in some cases it became as large or larger than it was before confinement. The milk diminished in quantity from the commencement, and entirely ceased on the second day.

⁊ In a few cases cephalalgia was present from the onset, and became very violent before the disease terminated. The bowels were disturbed but in a single case, and that was the black woman, and she had complained of a great frequency of stools for a day previous to labour.

The skin, which at first was hot and dry, became moist and clammy in the latter stages of the disease.

In those patients who recovered, the commencement of convalescence was marked by the absence of pain, and the diminution of tenderness of the abdomen. The lochia appeared, and the tongue assumed a moist and creamy appearance, and the pulse approached the natural standard.

In those cases where the disease approached a fatal termination, all the symptoms mentioned above increased in severity. The countenance became fallen and haggard, the tongue and mouth dry and parched; sordes collected on the teeth; the extremities became cold; low muttering delirium, and death followed, generally about the fourth or fifth, and in one case on the second day from the attack.

An examination of the body after death exhibited a dark-red injection of the peritoneum throughout its whole extent. The cavity of the peritoneum contained some reddish serum, mixed with flakes of lymph. The parietes of the uterus in some cases appeared softened. On cutting the uterus open, the internal surface was found lined with a dark-red, tenacious mass, which was more firm, but in other respects appeared like clotted blood. In some places this substance appeared to penetrate the substance of the uterus. The veins of the uterus were not examined in every case, but in those in which they were examined, that condition described by Dr. Robert Lee, in the *Cyclopedia of Practical Medicine*, was not observed. The other organs were healthy, except in the case of the black woman, of whom mention was made above. In this case the mucous coat of the intestines was injected more than usual, particularly at the cæcal extremity of the ileum. The glands of Peyer were ulcerated, and presented an appearance very similar to what we meet with in typhoid fever. The large intestine, on its internal surface, was covered with a deposit of coagulated lymph, and resembled the skin covered with warts. In this case the inflammation of the peritoneum was not so well marked. The condition of the uterus was the same as in the other cases.

The *treatment* made use of consisted of a constant application of a

warm flaxseed cataplasm, large enough to cover the whole abdomen. This was applied during the chill, and continued throughout the course of the disease in every case. In a few cases leeches were applied to the abdomen, and in one case to the neck of the uterus. Blood-letting from the arm was practised in two cases, soon after reaction from the rigor, when the pulse was full and hard, and did not exceed ninety in frequency. Both of these cases terminated fatally, and the duration of the disease was shorter than usual. In the first case, small doses of blue pill were administered at intervals, with the view to its constitutional effect; but it neither affected the gums nor arrested the disease. Anodynes were prescribed to allay the pain, and with temporary benefit. The remedies that seemed to have the most happy effect, were calomel combined with ipecac and opium powder, given in large doses. From eight to ten grains of the former with fifteen of the latter, were given every four hours, until the pain ceased or was much mitigated. When given in this way, the calomel neither disturbed the bowels nor affected the gums. One patient recovered under this treatment who had presented symptoms as violent as any other that occurred during the time the epidemic prevailed in the same stage of the disease. This patient took thirty-two grains of calomel, and a drachm of ipecac and opium powder, in sixteen hours, at which time the pain entirely left her, and she convalesced rapidly afterwards.

In the latter stages of the disease, a variety of remedies were resorted to without any apparent benefit, such as raising the epidermis over the abdomen, and covering the surface with camphorated mercurial ointment. Sinapisms were applied to the extremities, and ammonia, and brandy, and egg, with other stimulants given internally.

When the abdomen became so enormously distended as to interfere with respiration, producing alarming dyspnœa, as it did in some cases, the rectum tube was used, and injections of turpentine, assafœtida, &c., was resorted to.

Cases of Closure of the Vagina in Infants after birth. By J. C. NOTT, M. D.

CASE I.—In the early part of 1837, I was requested to see the infant daughter of Mrs. P., of Mobile, aged 12 months. The mother and nurse both affirmed that the child was healthy and free from any deformity at birth, and for at least three or four months afterwards. They further stated that they had accidentally discovered, a few days before consulting me, that the vagina was closed, but were unable to say at what time this had taken place, as there had never been any inflammation, discharge from the parts, or any circumstance to attract particular attention.

On examination, I found a perfect adhesion of the labia, and closure of the vagina—the orifice of the urethra alone remaining open. The appearances were those of a congenital deformity, the parts being healthy, and the position of the os externum being marked by a superficial sulcus.

The child was teething, and as I saw no good reason for immediate interference, I advised that nothing should be done until this period was gone through. The parents, with the child, went to Scotland to spend the summer, and when they returned in the winter, I found, on examination, that the vagina had opened *spontaneously*—the parts were perfectly natural, and have remained so ever since.

CASE II.—In July last, Dr. McNally called on me, and asked me to see

with him a child, about the same age, and under circumstances so similar in every respect, that I deem any details unimportant. I related the above facts to him, and we agreed to leave the case to nature for a few months.

We have recently examined this patient again, and find that a spontaneous opening has taken place as in the other case.

Remarks. These cases are not of frequent occurrence, are not to be found in our common works on surgery and diseases of children, and may embarrass the inexperienced practitioner. There can be no objection to the delay of an operation, and it is always prudent to avoid cutting if possible.

MOBILE, 6th Dec. 1842.

Cimicifuga and Iodine in Incipient Phthisis.—DR. CHS. C. HILDRETH,* in an interesting paper on this subject in our last No. (p. 281 et seq.) states that “to whom we are indebted for the original introduction to the notice of the profession of the Black Snakeroot in Phthisis, I am not able to discover.”

This observation has attracted the attention of Dr. F. J. GARDEN of Wylliesburg, Charlotte, Va., who writes to us, to assert his claim to that merit, and refers in support of it to his paper “on the use of the *Actæa Racemosa* in Phthisis Pulmonalis,” published in the *American Medical Recorder* for October 1823, which, he says, is the only essay up to that time in print on the subject.

“I have been an attentive reader,” Dr. Garden writes, “of the Medical Recorder and Journal, for twenty one years past, and since my first publication, have watched with intense anxiety the progressively increasing claims of this remedy to merit, lest, as then stated, “I should be thought the boasted discoverer of a remedy, which had no claims to merit, except in the imagination of its inventor.” The pages of the Journal bear testimony to the fact, that it has since been used in various forms of cough, in the Northern States, and that whenever it has been wielded, by a skilful hand, one who knew when and how to control and modify its action, by combination or other circumstances, I find it has always been used with good effects. Like all other remedies, this may be the proper one, yet it may fail for the want of tact in its administration. By tact I do not mean skill; one man may succeed with a certain remedy in producing effects, which no other can; not because he is a man of superior skill, but because he has noticed and watched its effects more closely. I must not be understood as insinuating that I am at all in advance of others upon this point.

“The *Cimicifuga*, is no less successful in chorea, than in various forms of pulmonary disease. I once treated a case of chorea successfully, by means of this remedy alone, in a little boy, after the usual and most approved remedies had been previously, perseveringly, and diligently used, for some time without effect. It was given in form of powder in tea-spoonful doses twice a day, in a little molasses. Its effects were prompt and decisive: I confess however its administration in this form of disease, had not been thought of by me, until my attention had been awakened by a publication in the Medical Journal six or eight years ago, in which the writer detailed several cases successfully treated by him. I am not at present able to lay my hands upon the paper, after a careful and diligent search; I must, however, acknowledge my obligations to the author; he, like myself, was induced to use it upon vulgar report: some old woman put him in possession of the remedy.

“In my own person were united all the prominent symptoms of phthisis, as quick breathing, frequent pulse, diarrhœa, night sweats, hectic action, irregular

* Our correspondent doubtless refers to the paper of Dr. Young; see this Journal for Feb. 1832, p. 310, vol. ix.

paroxysms, cough, purulent expectoration, &c. &c. Efficient doses of the Cimicifuga in Tincture, say from one, to one and a half ounces, undiluted, prepared of good old rye whiskey, taken twice a day before meals, arrested in a very few days the entire catenation of symptoms, except the cough, and expectoration, and these not half so distressing.

"I saw and conversed with a number of distinguished physicians, and sought their advice and undisguised opinions, all of whom, with a single exception, pronounced my case a forlorn one. In a letter addressed to me by Professor Dudley of Lexington, in reply to one which informed him of my recovery, he uses the following emphatic language: 'Your recovery is a signal triumph over disease.'

"The Cimicifuga also combines in its qualities decidedly alterative powers, and hence perhaps results its tonic action; for without puking, sweating, or purging, or any other obviously operative effect, besides those detailed in a former publication, the appetite and strength improves rapidly. My remarks of course must be construed as applying, to those pathological states of the system, alone, to which its use is applicable. To administer a remedy in states of the system in which it is not indicated, is sufficient of itself to insure its own failure.

"Whenever the hepatic secretions are deranged, its action is greatly assisted by preparing the patient with a dose or two of calomel, whether the tincture or infusion, either hot or cold, is the form of administration preferred, for it yields its powers freely to all of these menstua. A light diet too is a matter of primary importance. In one case in which its powers were displayed as happily as in any other, the patient confined himself to a glass of buttermilk, and a little corn bread three times a day. This was not a case of phthisis, but derangement of the stomach and liver, in a lymphatic temperament, which had obstinately refused to yield to other treatment; for, as is usual in such constitutions, the mercurial plan rather served to aggravate and irritate. Six weeks perseverance with this treatment, unaided by any other remedy, restored the patient to the most perfect, vigorous and robust health, which continued permanent."

Medical Notes. By GEORGE COLMER.—*Paralysis in Teething Children.*—Whilst on a visit to the parish of West Feliciana, La., in the fall of 1841, my attention was called to a child about a year old, then slowly recovering from an attack of hemiplegia. The parents, (who were people of intelligence and unquestionable veracity,) told me that eight or ten other cases of either hemiplegia or paraplegia, had occurred during the preceding three or four months within a few miles of their residence, all of which had either completely recovered, or were decidedly improving. The little sufferers were invariably under two years of age, and the cause seemed to be the same in all—namely, *teething*.

Intense Smarting of the Skin caused by the endermic use of Iodine.—In a case of enlarged spleen, I lately made use of the *unguentum iodini* with my own hand, on a male adult, but hardly had I commenced inunction before the patient complained loudly of an agonizing smarting and burning of the skin, and in a few minutes more, became so boisterous, that I was compelled to grant him an anodyne to relieve his suffering. A few days afterwards, I repeated the process, and the same result following, I was obliged to abandon its further use.

Case of Neuralgia.—During the night of the 15th October, 1841, Thomas Burnett, a white lad of seven years of age, of previously robust health, was attacked with neuralgic pains on the inner side of the right foot and calf of the leg; the next night, at the same hour, the pains returned, and reached to the inside of the thigh; the third night, they arrived at the

lumbar spine; and the fourth and subsequent nights, they not only extended to the other leg and thigh, but also to the upper portion of the spine, to both the upper extremities, and occasionally to the face and scalp. The pains were intermittent and lancinating, and so severe as to make the little sufferer writhe and scream with agony every five or ten minutes. The paroxysm generally lasted from six to eight hours. The pulse was accelerated, but only at times; and during the transitory intervals of ease, a copious perspiration would sometimes suddenly break out, but almost as rapidly recede.

Taking into consideration the perfect regularity in the return of the attacks, I resolved on employing as an anti-periodic, the sulphate of quinine, which I did in five-grain doses, during the intervals of the paroxysms, to the extent of from 30 to 40 grains daily, combined with one-fourth the quantity of camphor. The bowels were kept in a soluble state with castor oil. During the paroxysm, I gave in divided doses, about half a grain of the sulphate of morphia, with half an ounce of the sweet spirits of nitre. Under this course, I had the satisfaction to see the disease yield gradually but completely, in less than a fortnight; and up to the present time (Nov. 1842,) it has not returned.

Child born with Small-pox eruption, the mother not having had the disease.—The following very curious case has been communicated to us by our correspondent, Dr. B. F. JOSLIN, of New York. It has already been published in a New York Journal.

"On the 27th of April, 1842, the wife of John M—, residing in Fourth street, gave birth to a male child, after a natural labour, about eight or nine days before the expiration of the ninth month, according to her reckoning. It was apparently lifeless; but on means being used for restoring animation, it breathed faintly a few times, but in a quarter of an hour expired. I found on its body, about 170 regularly formed small-pox pustules, of the usual size, and filled with yellowish purulent matter. They were generally of a regularly circular form, except on some parts of the hands and feet, where their close proximity had produced confluence. Next to the hands and feet, the parts most affected were the legs, arms, hips, and posterior part of the pelvis. Most of the pustules were about one-fifth of an inch in diameter, some of them quite prominent, but most of them rather flat and flaccid, and the matter rather thin. The process of scabbing had not commenced, the pustules being apparently at the stage at which they would be found in ordinary cases about eight or ten days after the incursion of the disease.

"The circumstances were such as to fix with some precision the time when the infection had been received by the mother, which must have been just thirty days previous to the birth of the child. That was the only time of her exposure, which was to a single case at the very commencement of the eruption, and for a single day. I was at that time sent for to pronounce on the nature of the incipient eruption. This was not the stage of maximum activity of the effluvia; yet there was no other medium; no contact with the body or clothing of the patient. The infection must have been received by inhalation.

"About thirty years previous to this time, the mother of the child had, in early childhood, received vaccination, and effectually, as was subsequently proved. For not only was she vaccinated by me on the day of this exposure without effect, but the infection which communicated genuine and fatal variola to the fetus in utero, must have been transmitted through the blood of the parturient female, without producing at any time in herself the slightest varioloid symptoms.

"Though cases like the above are rare, several have been recorded, and one occurred to Jenner himself. In the mode of transmission there is still some

mystery, the solution of which might throw light on some other curious points in physiology and pathology. Such cases show a sufficient connection between the maternal and fetal circulation to allow through its medium the transmission of a portion of the inconceivably dilute virus, in sufficient quantity to infect the fœtus. I say inconceivably dilute, for in cases like the above, where the mother is not disordered, there appears to be no multiplication of the particles of virus by any leavening process. Yet on the other hand, where the mother is affected, the fœtus in some cases is not.

"The fact that the pustules of small-pox patients are found on the skin but never on the viscera, has been attributed to the influence of air; but their existence on the skin of the fœtus, and in some instances in such numbers as to cover it, is incompatible with this hypothesis. I believe it has not been shown that the liquor amnii possesses properties which might be supposed to enable it to perform this office vicariously. This determination to the surface seems rather to result from an inherent centrifugal tendency, a beneficent provision for the relative security of the vital organs."

Weight of New-born Children.—This subject has been but little attended to in this country, and every contribution to it is therefore valuable. Dr. Storer states, that he has found a great disinclination, and at times, a decided unwillingness on the part of friends, to have the infant weighed. Of thirty children, fourteen females weighed 112 pounds, or averaged 8 pounds each; and sixteen males weighed 145½ pounds, or averaged 9 pounds each. The males and females weighed together 257 pounds, or averaged 8½ pounds each. The largest child seen by Dr. Storer, was a male and weighed 13 pounds; the next in weight was 12½ pounds. One weighed 11, one 10½, and two 10 pounds. The smallest infant was a female, it weighed 1 pound 14 ounces, and lived eighteen hours.—*New England Quarterly Journal of Medicine & Surgery*, July 1842.

Humerus fractured by a musket-ball—artificial joint.—Dr. W. L. SUTTON, of Georgetown, Ky., relates in the *Western Journ. of Med. & Surg.* (Oct. 1842,) the interesting case of a man, who was shot in the arm, the ball passing through the humerus, immediately above the condyles. It would appear that no very strict treatment was pursued. After some weeks, he regularly bent his arm every day. This arm got well with the elbow stiff, and an *artificial joint at the place of fracture*. "This artificial joint supplies the place both of the elbow-joint, and of the rotatory motion of the forearm, in a very perfect manner, and he is able to do a good day's work or any kind of labour."

Malignant Diseases of the Uterus.—Dr. BIGELOW reported to the Boston Society for Medical Improvement, on the 9th of May last, the following interesting case of malignant disease of the uterus, which occurred in a lady, fifty-four years of age. Dr. B. saw her first a year ago last June. A year or more previous to this, she had discovered a tumour in her right hypogastrium, extending up, and at length occupying the whole lower part of the abdomen. As felt externally it appeared to be about five or six inches in diameter. It was attended by no pain, but at times by a slight tenderness on pressure. One of its most uncomfortable symptoms was a very fœtid discharge from the vagina. On examination by the vagina, the os uteri was felt closed, hard and corrugated; the neck nearly obliterated. Through the rectum the same tumour was observed more distinctly, extending abruptly back, occupying the whole lower curvature of the spine. It went on increasing for some months, giving much discomfort from the discharge, and bearing-down pains which at times attended it. At one of his examinations, Dr. Bigelow found the os uteri open, and a soft insensible substance protruding. Some portion of it he was able to get away, and found to consist of a cerebriiform substance, with some coagulated blood. At subsequent examinations he found the os uteri more dilated, and was able to remove still more. The operation was accompanied by some hemorrhage, but no pain. It appearing to be not a tumour of the uterus, but something contained within it, he

determined to try the effect of ergot in expelling it. He accordingly prescribed 15 grains every half hour. He had scarce reached home when he was called back, and on returning found the patient in extreme, unremitting bearing-down pains, like those which usually follow the exhibition of ergot. They were so intense that he was obliged to give laudanum freely to check them. Immediately after, upon examination, he found and removed from the vagina a large mass of cerebriiform substance amounting to between one and two pints. Considerable hemorrhage followed, but the patient was much relieved as to the size of the tumour and the other symptoms. Previously the tumour had been so large as to press upon the rectum, and obstruct the passage of its contents, so that even cathartics and enemata could with difficulty be made to operate. This mass was removed in April. She continued to be very much improved in health, though annoyed by the fœtid discharge. In the latter part of August, a more satisfactory examination was made, and the tumour was found to be connected with the inside of the uterus by a large pedicle. Thinking it might now be removed by ligature, Dr. Bigelow carried to the house the apparatus for the purpose. But in pulling down the tumour, while endeavouring to apply the ligature, the whole broke off and left only a stem behind. The hemorrhage was considerable, but no greater than in some of the previous operations. The symptoms almost immediately ceased. The discharge in a great measure ceased, and the tumour nearly disappeared. Her general health greatly improved. She continued well through the early part of the winter, but towards the close the abdomen began again to enlarge, and the discharge returned. The tumour gradually rose till it reached the umbilicus; sometimes quite tender, but never very painful. From time to time portions were detached and removed. Her health continued to decline. Anorexia, nausea and vomiting occurred, under which she sunk, became delirious, and died in 24 hours. At the autopsy the uterus was found much enlarged, being 7 inches in length, and 5 in width, and almost universally adherent to the neighbouring parts, viz. the cæcum, small intestines, rectum and bladder. On cutting it open, the parietes were found from one and a half to two inches thick. The cavity was enlarged, somewhat ragged, dark coloured, and contained a black secretion of a fœtid and gangrenous odour. The cavity was continued into the right Fallopian tube, which was so dilated that it would admit the little finger. There was a perforation at the fundus of the uterus, which was only prevented from penetrating the peritoneal cavity by the adhesions of the intestines. The portion of the tumour which remained was composed of the same cerebriiform substance which had been removed.—*The New England Quarterly Journ. Med. Sci.*, Oct. 1842.

Fracture of the scaphoid cavity of the radius—fracture of the lower end of the ulna.
—The two following cases of this accident are related by Dr. W. L. SUTTON, of Georgetown, Ky., in the *Western Journal of Medicine and Surgery*, Oct. 1842.

CASE I.—Mrs. P., Sept. 4th, 1838, was thrown from her carriage, and received her weight on the left hand and forearm, by which the scaphoid cavity of the radius was split, and the lower end of the ulna fractured just above the styloid process. I dressed the fracture in the usual way, and by attention, I had as much gratification as the most unqualified satisfaction expressed by the lady and her friends could give; yet I could see, that although there was no absolute deformity, still there was a want of symmetry, which I was much mortified to see in a lady's arm, especially as it occurred under my own management.

CASE II.—Nov. 1839, A. G., a carpenter, middle aged, fell about eight feet upon his hands, splitting the glenoid cavity of the left radius, and of course having a dislocation of the wrist. Being much dissatisfied with the usual mode of dressing in such cases, and having seen a statement of Dr. J. R. Barton's mode of treating them, I determined to try it. Having the arm properly extended, I applied a roller upon the hand and forearm, securing a compress some third of an inch thick, and two and a half square, on the carpus and back of the hand, and a similar one on the palmar side of the radius, just above its carpal extremity, in such a way that the superior extremity of one corresponded with

the inferior edge of the other. Over these I applied two thin but firm wooden splints, long enough to extend from the elbow to the points of the fingers. After a week the dressings were removed and reapplied daily, pressing the fractured portion of the radius firmly so as to prevent displacement, whilst the fingers and wrist were fixed and straightened; and after ten or twelve days adding pronation and supination to these motions. At the end of treatment the wrist was found perfectly symmetrical. I hold myself under much obligation to Dr. Barton for instruction on this point.

Pereira's Materia Medica.—We have the pleasure to announce that this valuable work is rapidly passing through the press, and will be soon ready for publication. The additions by the American Editor, Dr. Carson, and there is no one more competent to the task, are numerous and important; and consist in the introduction of the preparations of the U. S. Pharmacopœia, with their formulæ, and of many articles belonging to our indigenous *Materia Medica*, with their history, uses, preparations, &c. Dr. Carson has also inserted the nomenclature of the U. S. Pharmacopœia, and added various notes which embody much useful information.

The Medical Student's Guide, being a compendious view of the Collegiate and Clinical Medical Schools, the courses of private lectures, the Hospitals and Almshouses, and other Institutions which contribute directly or indirectly to the Great Medical School of Philadelphia, with the regulations of hours, fees, &c. and other information of importance to Students. 1842-3. Dr. HEBER CHASE has published under this title a small volume of one hundred pages 12mo, which will be of the greatest use to students. The author very truly remarks that "many and perhaps most, of the collegiate pupils remain ignorant of the advantages which surround them, beyond the walls of the school of their selection, until the course of study is verging to a close, and these advantages are no longer available. Many have bitterly regretted this ignorance in after life, and not a few have incurred considerable expense and sacrifice of practice, by returning, after several years of experience in these deficiencies, to acquire that knowledge of some special subject, which, during their noviciate, they did not know to be obtainable."

Dr. Bollon's Treatise on Strabismus.—In the notice of this little volume in our last No., it is stated that "Not the slightest allusion is made to the fascia of the eye, described by Tenon, a knowledge of which is so important for the performance of the operation for strabismus, and to which attention has lately been called by Lucas, Ferral, Bonnet, &c." On this point it seems that injustice has been done to the author. For though no mention is made of that structure in the preliminary section, devoted to the anatomical relations of the parts concerned in the operation, and where it would be naturally looked for, there is actually a cursory allusion to it in a note on p. 16, and again at pp. 21 and 25.

We honestly strive to mete to all the full amount of credit to which they are entitled, and whenever we fail to do so in the slightest particular, we shall always hasten to repair the injustice.

Necrology.—It is with regret that we announce the death of our correspondent, Dr. M. Morrison, which took place at the city of Havana, Cuba, on the 14th of Sept. last. Dr. M. was a graduate of the University of Maryland, and for several years resided in Buenos Ayres, where his achievements in surgery were of a very brilliant character, and will perpetuate his name. An account of some of these operations were recorded in the No. of this Journal for Feb. 1837.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.—SESSION 1842-43.

The Lectures will commence on Tuesday, the first of November, and be continued, under the following arrangement, to the middle of March ensuing:—

Practice and Theory of Medicine,	- -	by NATHANIEL CHAPMAN, M. D.
Chemistry,	- - - - -	" ROBERT HARE, M. D.
Surgery,	- - - - -	" WILLIAM GIBSON, M. D.
Anatomy,	- - - - -	" WILLIAM E. HORNER, M. D.
Institutes of Medicine,	- - - - -	" SAMUEL JACKSON, M. D.
Materia Medica and Pharmacy,	- -	" GEORGE B. WOOD, M. D.
Obstetrics and the Diseases of Women and Children,	- - - - -	" HUGH L. HODGE, M. D.

A course of Clinical Lectures and Demonstrations, in connection with the above, is given at the very extensive and convenient Infirmary called the Philadelphia Hospital.

Clinical Medicine,	- - - - -	by W. W. GERHARD, M. D.
Clinical Surgery,	- - - - -	" Drs. GIBSON and HORNER.

Dr. Horner continues in public attendance at the said Hospital until August 1st; and as the tickets of admission are issued for one year from November 1st, they remain valid for his course, and the other service of the house, until the time expires.

Clinical Instruction in Medicine is also given from the 1st day of November to the 1st day of March by Dr. Wood, in the Pennsylvania Hospital, an institution which is well known as one of the finest and best conducted Infirmaries in the United States.

The rooms for Practical Anatomy will be opened October 1st, and continued so to the end of March. They are under the charge of Paul Beck Goddard, M.D., Demonstrator, with a supervision on the part of Dr. Horner.

Copious additions to the very extensive cabinets of Anatomy, Materia Medica, Chemistry, Surgery, and Obstetrics, have recently been made, and are in progress; the polity of the school being to give to its instructions, both Didactic and Clinical, a character as practical and influential as possible in imparting a sound Medical education.

The Professor of Materia Medica, besides his Cabinet, has an extensive and well furnished Conservatory, from which are exhibited, in the fresh and growing state, the native and exotic Medicinal Plants.

W. E. HORNER, M. D.,

Dean of the Medical Faculty, 263 Chestnut Street, Philadelphia.

NOTE.—A considerable number of the distinguished graduates of the school who are in connection with the Medical Department of the Guardians of the Poor, and with the different Dispensaries and Beneficiary establishments of the city, give Clinical and Elementary Instruction through the year, in private, and in their rounds of practice, to such gentlemen as desire it.

JULY, 1842.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The regular course of Lectures in this Institution will be resumed on the second Monday in November.

Anatomy,	- - - - -	by J. E. HOLBROOK, M. D.
Surgery,	- - - - -	" E. GEDDINGS, M. D.
Institutes and Practice of Medicine,	- -	" S. HENRY DICKSON, M. D.
Physiology,	- - - - -	" JAMES MOULTRIE, M. D.
Materia Medica	- - - - -	" HENRY R. FROST, M. D.
Obstetrics,	- - - - -	" THOMAS G. PRIDLEAU, M.D.
Chemistry,	- - - - -	" C. U. SHEPARD, M. D.

The school for Practical Anatomy has been reorganized, and will be under the charge of Prof. Holbrook, assisted by Drs. Desaussure, Chazal, Sinkler, Gaillard, and Ravenel.

Clinical Instruction at College Hospital, Marine Hospital and Almshouse.

HENRY R. FROST, *Dean.*

GEO. W. CARPENTER & CO.

Have great pleasure in offering the following to the Medical Profession of the United States as an invention of great importance.

MRS. BETTS' UTERINE SUPPORTER,

For the relief and permanent cure of Prolapsus Uteri, &c. A valuable substitute for the Pessary, to which it has numerous advantages, and is in every way preferable.

The medical profession are greatly indebted to Mrs. James Betts, a well educated and accomplished lady of this city, for the introduction of the above apparatus, which she invented for her own case, and which, under the care of Professor Jackson of this city, was conducted to such a successful issue, that she was induced afterwards to offer the instrument to the medical profession. Dr. Wm. Harris, of this city, who has an extensive acquaintance with the diseases of women and children, states, that in the last three years, he has tried the uterine supporter of Mrs. Betts in his own practice and in consultation, on upwards of fifty females, with great success;—in some producing radical cures, and in others great comfort; and he feels constrained to give it his cordial recommendation, as will be observed in his letter accompanying this notice.

Dr. Harris also makes the following remarks in the Medical Examiner, No. 13, Vol. I.

"More than a hundred medical gentlemen in this city, among whom are Professors in each of the four Medical Schools, have tried it on their patients afflicted with prolapsus uteri, and are testifying to its great advantages over every other apparatus employed by the profession; and more than a thousand females either radically cured or materially benefited, are earnestly recommending it to their fellow sufferers."

This apparatus has received the sanction of many physicians of extensive practice in various parts of the United States, and the accompanying letters from very eminent and distinguished physicians of this city, of great professional attainments, and connected with the professional chairs of our Medical Colleges here, will give such weight to the testimonies as will establish clearly the value and importance of the apparatus to the medical profession, and ensure the confidence of those unacquainted with it.

The supporter has been so arranged, that it can be applied either by the Medical attendant, or by the patients themselves, by following the instructions accompanying each instrument in pamphlet form.

Letter from Professor Samuel Jackson, of the University of Pennsylvania.

"Some years past, Mrs. Betts, at my suggestion, made an instrument for giving support to the abdomen and perineum which I have continued to employ from that time in my practice with most decided advantage.

"It frequently happens that the tone of the abdominal muscles is lost, and they become relaxed. The large and weighty packet of the intestines losing (in consequence) their support, gravitate on the pelvic viscera, pressing on the uterus, and sometimes

deranging its position; the liver and other viscera follow the intestines, sink downward, and drag on their ligaments.

"Lesions will result from this condition; there is a most exhausting sense of emptiness and dragging felt in the superior position of the abdomen, and a feeling of weight and pressure in the lower; attended with pain of the back. The patient cannot stand erect, exercise, or walk without inconvenience or suffering. There is often disability for any kind of exertion.

"Artificial support of the abdomen remedies more or less effectually this train of disorders, and rarely fails to abate the most uncomfortable of the symptoms.

"The apparatus of Mrs. Betts is well adapted to accomplish this purpose. I have been enabled to give prompt relief in many distressing cases by its application. I have no hesitation in recommending it to the medical profession, as an efficient means in the class of cases to which it is applicable. SAML. JACKSON, M. D.

"Philadelphia, December 13th, 1842."

Letter from Dr. Wm. Harris.

"Mrs. Betts' uterine supporters have been used extensively in my practice for several years, and with great success.

"Radical cures have been made repeatedly after every other means had failed to afford relief.

"Ladies afflicted with procidentia uteri, who were unable to leave their chambers without great suffering, found such immediate relief from the application of the supporter, that in a few days they were able to pay morning visits on foot, and with very little inconvenience.

"One of the worst cases I have ever seen was completely cured by the supporter in a little more than a year, and some less formidable have been relieved in from 3 to 6 months. I recommend this instrument cordially to the medical profession, believing it to be one of the greatest improvements of modern times. WM. HARRIS, M. D.,

"Lecturer upon Obstetrics and the Diseases of Women and
"Children in the Philadelphia Medical Institute.

"Feb. 24th, 1842."

Letter from Professor Thos. D. Mutter, of the Jefferson Medical College, Philadelphia.

December 11th, 1842.

MY DEAR MADAM—It affords me much pleasure to state that I have repeatedly employed your supporter in cases of prolapsus uteri, and with the most decided benefit. I have no question of its value as a remedy in the complaint, in the relief of which it has been invented. Very truly yours,

T. D. MUTTER.

MRS. BETTS.

From the New York Lancet.

"In New York, her invention has received the unanimous approbation of the most distinguished members of the faculty, and is rapidly acquiring the most extensive reputation amongst the interesting class of sufferers, for the promotion of whose comfort it is intended."

"Six of the Professors of the Medical schools in this city, and all our most eminent physicians unite in commending Mrs. Betts' invention to public approbation."

"Clinique at the College of Physicians and Surgeons, New York, April 22d, 1842.

"Professor Gillman made some judicious remarks on the treatment of prolapsus uteri. He condemned in toto the use of the pessary, and highly recommended the supporter introduced by Mrs. Betts."

It is of great importance to the faculty to know that there are apparatuses of various constructions made, which are called uterine supporters, and that imposition might be practised by substituting others for those of Mrs. Betts, and even inferior imitations of hers made and offered for sale as genuine. Mrs. Betts has, therefore, been induced to annex her written signature, *Sarah Betts*, and any instrument not having such signature, can be

recognised as spurious manufacture, and those with the signature can be identified as hers. A proper attention to this precaution will be an advantage to all who may have occasion to use the instrument.

Orders from physicians and others, addressed to the subscribers, will meet with prompt attention, and agencies, if desired, will be appointed in various parts of the United States, for the convenience of supplying physicians in other states. No agencies will be appointed for the sale of the article on commission; as the apparatus is too expensive to furnish in that way, the order must be for the direct purchase. There will be no kind of risk in the purchase. The article has been in use here for several years, and the distinguished gentlemen who have given testimonials of it, have at this time increased confidence in the application of it.

GEO. W. CARPENTER & Co.

No. 301 Market St., Philadelphia.

N. B.—The supporters are made in such manner as to be adapted to persons of different sizes, but it would be preferable for physicians at a distance ordering them, to send the measure of the patients to whom they are to be applied, around the abdomen immediately over the top of the hip-bone, as in this case they could be sent of the exact size, without the necessity of adjusting them.

VALUABLE DISCOVERY.

AMERICAN OIL.

THE above name has been given to a mineral oil discovered in boring for salt at the depth of 180 feet from the surface of the earth in Cumberland Co., Kentucky. It occurs near the base of Rennicks mountain, about a quarter of a mile from Cumberland river. It at first rose spontaneously from the earth to the height of 30 feet, but continued gradually to diminish, and is now obtained by pumping it up with machinery by horse power, at considerable expense.

This oil contains petroleum, naptha, sulphur, hydrogen and other essential properties, and has been found highly useful when given internally, in disorders of the chest, when not attended with inflammation, acting as a stimulating antispasmodic and sudorific. Externally it has been found highly valuable as a stimulant embrocation in gout, rheumatism, sprains, bruises, chilblains, burns, affections of joints, and paralysis, &c.; also for old sores, ulcers, &c., and has been found especially serviceable for galled back, colic, botts, fistula, sprains and other diseases of horses, and should be kept by every owner of horses as a valuable remedy, when necessity requires its use. Also in families as a valuable remedy in the cases referred to.

The subscribers have made arrangements to supply this article to the trade, and druggists throughout the United States, can be supplied with it, at the lowest price at which it can be afforded by the proprietors.

GEO. W. CARPENTER & CO.,
301 Market Street.

LEA & BLANCHARD, Philadelphia, have just Published :

A SYSTEM OF PRACTICAL SURGERY, by Professor William Ferguson, of King's College, London, illustrated with 250 Illustrations, executed by Gilbert, from designs by Bagg, with notes and additions by George W. Norris, M.D., one of the Surgeons to the Pennsylvania Hospital, in one volume, 8vo.

A SPECIMEN OF THE WORK IS HERE SUBMITTED.

OPERATIONS ON THE NOSE AND NOSTRILS.

small scalpel was introduced under the apex, and the alæ were separated from the parts underneath; next the knife was carried on each side between the skin and the bones, as far as the infra-orbital foramen, taking care not to interfere with the nerves, when by passing the point of my finger below the nose, I caused the latter organ to be as prominent as could be wished. I now pushed a couple of long silver needles, which had been prepared for the purpose, with round heads and steel points, across from one cheek to the other, having previously applied on each side a small piece of sole-leather perforated with holes at a proper distance; then I cut off the steel points, and with tweezers so twisted the end of each needle as to cause the cheeks to come closer to each other, and thus render the nose prominent. Figure 213 further elucidates the proceeding. Thus, by bringing the cheeks more into the mesial line, a new foundation, as it were, was given to the organ. Adhesion occurred in some parts, granulation in others; in the lapse of ten days the needles were withdrawn, and, in the course of a few weeks, when cicatrization was complete, the nose presented as favourable an appearance as could reasonably have been desired. Now a columna was formed in the manner already described, and at last I had the satisfaction of producing such a result as that exhibited in figure 214. Here

Fig. 213.

Fig. 214.



matters were still further improved by the addition of an artificial eye, to make amends (in some degree) for the loss of the original one, which had been destroyed by ophthalmia some years before.

The publishers commend this Work to the attention of the Profession as one combining *cheapness and elegance*, with a clear, sound, and practical treatment of every subject in surgical science. No pains or expense has been spared to present it in a style equal, if not superior to the London edition, and to match the edition of Wilson's Anatomy lately published.

lume, however, which none of these gentlemen have noticed, and the author is sufficiently sanguine to entertain the idea that this work may in some degree assume that relative position British Surgery which the classical volumes of Valpeau and Malgaigne occupy on the Continent. It is highly recommended in Forbes' Medical Review, and by numerous Surgeons and Physicians who have examined the work.

LEA & BLANCHARD have just published, and beg leave to present a specimen page of PEREIRA'S celebrated Work on MAETRIA MEDICA AND THERAPEUTICS, which should be denominated a *Library* or *Cyclopaedia* on those subjects, so full and complete is it that it has been termed a MINE.

GAMBOGE HEBRADENDRON.

1. HEBRADENDRON CAMBOGIOL'DES, Graham, E.—THE GAMBOGE HEBRADENDRON.

Cambogia Gutta, Linn.—*Stalagmitis cambogioides*, Moon.

*Sex. Syst.*¹ Monœcia, Monadelphia.

(Gummy-resinous exudation, E.)

(*Gambogia*, U. S. *Gamboge*. The product of an uncertain tree.)

HISTORY.—The first notice of gamboge is by Clusius (*Exot. lib. iv. cap. viii. p. 82*) in 1605. He received this gum-resin in 1603 from Peter Garet, of Amsterdam. It had been brought from China by Admiral van Neck and his companions, and its oriental name was said to be *Ghittaiemou*.

BOTANY. *Gen. Char.*—*Flowers* unisexual. *Males*: *sepals* four, membranous, permanent. *Petals* four. *Stamens* monadelphous, with a quadrangular column; *anthers* terminal, with an umbilicated circumscissile operculum. *Females* unknown. *Berry* many (four) celled; cells one-seeded; surrounded by a few abortive distinct stamens, and crowned by sessile-lobed muricated stigma. *Cotyledons* thick, consolidated; *radicle* central filiform.—*Trees* with entire leaves. (Graham, *Comp. to Bot. Mag.* ii. 199.)

Sp. Char.—*Male flowers* axillary, fascicled. *Sepals* when young nearly equal. *Leaves* obovate-elliptical, abruptly subacuminate (Graham).—A tree of moderate size. *Leaves* opposite, stalked. *Male flowers*: *sepals* four, imbricated, concave, yellow on the inside, yellowish-white on the outside. *Petals* spathulate-elliptical, crenulate, yellowish-white, red on the inside. *Berry* about the size of a cherry, round, with a firm reddish-brown external coat, and sweet pulp. *Seeds* large in proportion to the berry, reniform elliptical. (Condensed from Graham.)

β. On Man.—Taken in *small doses*, gamboge promotes the secretions of the alimentary canal and of the kidneys, and causes more frequent and liquid stools than natural. In *larger doses* it occasions nausea, oftentimes vomiting, griping pains of the bowels, watery stools, and increased discharge of urine. When the action is very violent, there is great depression of the vascular system. In *excessive doses* it acts as an acrid poison. A drachm caused horrible vomiting and purging, followed by syncope and death. (Paullini, *Eph. Nat. Cur.* Dec. i. Ann. viii. p. 139.) The deaths which have occurred from the use of enormous quantities of Morison's pills (see *Lond. Med. Gaz.* vol. xiv. 612 and 759; xvii. 357, 415, and 623; xviii. 75 and 297; and xix. 976) are mainly ascribable to the gamboge contained in these medicines. In these cases the symptoms were, violent vomiting and purging, abdominal pain and tenderness, cold extremities, and sinking pulse. On *post-mortem* examination, inflammation, ulceration, and mortification of the intestines, were found.

Gamboge belongs to the active hydragogues and drastic purgatives. Its activity is inferior to elaterium and croton oil. In acidity it exceeds jalap, scammony, and even colocynth. In its mode of operation it is allied to, though scarcely so acrid as, euphorbium. It is exceedingly apt to irritate the stomach, and to occasion nausea and vomiting. This arises from its ready solubility in the gastric juices. As this action on the stomach is exceedingly objectionable, we sometimes endeavour to lessen it by conjoining aloes, or some other substance which diminishes the solubility of gamboge in aqueous fluids, and by giving the medicine in the form of pill.

FIG. 238.



Hebradendron cambogioides.

- A. Male flowering branch.
 1. Back view of a flower.
 2. Side view of the calyx and column of stamens.
 B. Fruit-bearing branch.
 3. Section of fruit with its four seeds.

The Work forms Two Volumes, of about 1500 large and well-printed pages, with numerous illustrations on wood. Great expense has been incurred in getting it up, and the editor has

ELEMENTS OF MATERIA MEDICA AND THERAPEUTICS; COMPREHENDING

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More completely to adapt it to the demands of this country, such additions have been made as are deemed to be essential. Thus, the portion devoted to pharmaceutical information, is in the original work too strictly local, as it is confined almost exclusively to the peculiarities of the three British Colleges; to obviate this, the nomenclature of the last edition of the United States' Pharmacopœia has been introduced, by inserting the name of each article adopted by that standard, in connexion with those assumed by the authorities uniformly cited by the author, or by expressing a correspondence of name with one or more of them by the symbols (U. S.) in union with similar symbols used by him to indicate the authority. The formulæ of the United States' Pharmacopœia have also been set forth with the formulæ of the standards previously mentioned, and where a formula has been adopted, or a medicinal preparation assumed by our own work, entirely differing from those found in the text, it has been presented, with all the details necessary for its employment.

Succinct histories of the most important indigenous medicines of the United States, of which no account had been given, have been introduced in their appropriate places, as *Cassia Marilandica*, *Cheopodium*, *Cimicifuga*, *Cornus Florida*, *Eupatorium*, *Gillenia*, *Juglans*, *Pix Canadensis*, *Podophyllum*, *Prunus-Virginiana*, *Sanguinaria* and *Veratrum viride*; others of minor importance have also been noticed, and a sufficient exposition of their properties made, for their employment under circumstances that may render them expedient.

The matter that has been added, has been included within brackets, and distinguished by the insertion of the initials of the editor.

The Chemist, published in London, for July, 1842, says of this work, when referring to Druggists and Chemists:

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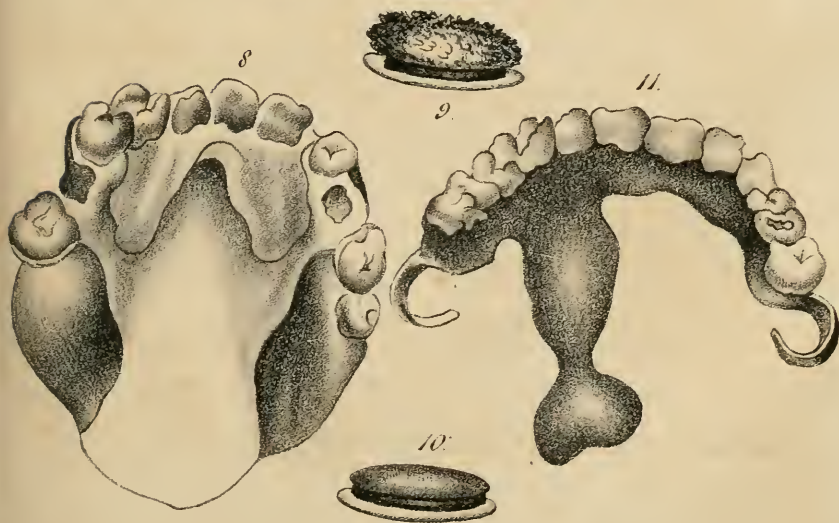
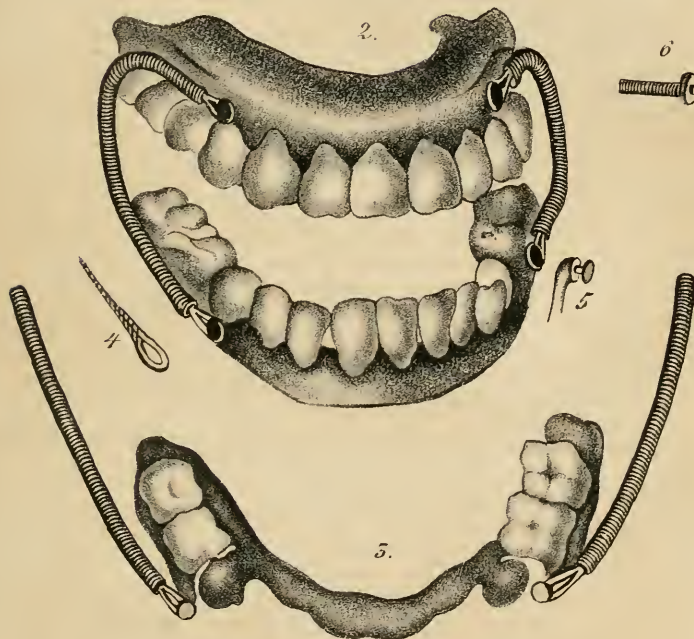
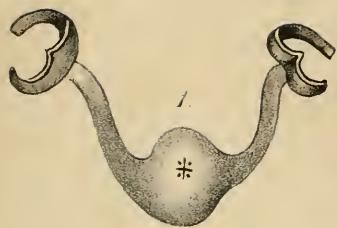
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TO READERS AND CORRESPONDENTS.

Communications have been received from Drs. Hodge, Stewardson, Earle, Harris, Roberts, Welch, Wilson, Fergusson, Shipman, Wharton, Parry, Spackman and Garden.

The following works have been received:—

On Diseases of the Bladder and Prostate Gland, with plates. By William Coulson. Third edition, revised and corrected. London: Longmans, & Co. 1842. (From the Author.)

Lectures on the Theory and Practice of Physic. By William Stokes, M. D., and John Bell, M. D. Second edition. In two volumes. Ed. Barrington & Geo. D. Haswell: Philadelphia, 1842. (From the Publishers.)

Treatise on the Dental Art; founded on actual experience. Illustrated by 241 figures in lithography, and 54 wood-cuts. By F. Maury, Dentist to Royal Polytechnic School. Translated from the French, with notes and additions, by J. B. Savier, D. D. S. Philadelphia: Lea & Blanchard, 1843. (From the Publishers.)

A Treatise on Ruptures. By W. Lawrence, F. R. S., Surgeon Extraordinary to the Queen, Surgeon to St. Bartholomews Hospital, &c. From the fifth London edition, revised, corrected, and considerably enlarged. Philadelphia: Lea & Blanchard, 1843. (From the Publishers.)

New Remedies, Pharmaceutically and Therapeutically Considered. Fourth edition, with extensive modifications and additions. By Robley Dunglison, M. D., Prof. Inst. Med. &c. in Jefferson Med. Coll., &c. &c. &c. Philadelphia: Lea & Blanchard, 1843. (From the Publishers.)

Denkwürdigkeiten aus der Medicinischen und Chirurgischen Praxis. Von Geo. F. Most, D. P. M. C. und G. &c. Eister Band; Leipzig, 1842. (From Dr. Oppenheim.)

Beiträge zur Wissenschaftlichen Heilkunde. Von Dr. C. A. W. Richter. Leipzig, 1842. (From Dr. Oppenheim.)

Bericht über die Ergebnisse des Therapeutisch-klinischen Unterrichts an der Kaiserlichen Medico-chirurgischen Akademie zu St. Petersburg während des Lehrjahres, 1839-1840. Vom Dr. Seidlitz, Prof. der Therap. Klinik, &c. St. Petersburg, 1841. (From Dr. Oppenheim.)

Geschichte der Gesundheit und der Krankheiten. Von Dr. Joh. Mich. Leopoldt, ordentlichem Professor der Pathologie, &c. &c. Erlangen, 1842. (From Dr. Oppenheim.)

Die Nahrungsmittel in ihren dietetischen Wirkungen. Bearbeitet von Dr. Hahn. Berlin, 1842. (From Dr. Oppenheim.)

Annual Report of the Interments in the city and county of New York, for the year 1842, with remarks thereon, and a brief view of the Sanitary condition of the city. Presented to the Common Council, by John H. Griscom, M. D., City Inspector. New York, 1843. (From the Author.)

A Practical and Theoretical Treatise on the Diagnosis, Pathology, and Treatment of the Diseases of the Skin, arranged according to a natural system of classification, and preceded by an outline of the Anatomy and Physiology of the skin. By Erasmus Wilson, Lecturer on Anatomy and Physiology in the Middlesex Hospital School of Medicine, and author of a system of Human Anatomy, with Illustrations. Philadelphia: Lea & Blanchard, 1843. (From the Publishers.)

Fisk-fund Prize Dissertation of the Rhode Island Medical Society. Spinal Diseases, both structural and functional, their causes and treatment. By Usher Parsons, M. D. Boston, 1843. (From the Author.)

An Introductory Lecture delivered before the Medical College of Georgia at the opening of the session, 1842-3. By Lewis D. Ford, M. D., Prof. Inst. and Pract. Med. Augusta, 1843. (From the Author.)

Catalogue of the Faculty and Students of Jefferson Medical College of Philadelphia. Philadelphia, 1843.

Report of the Board of Administrators of the Charity Hospital to the Legislature of Louisiana. New Orleans, 1843. (From Dr. E. H. Barton.)

Valedictory to the Graduates of Geneva Medical College, delivered Jan. 22, 1843, by Frank H. Hamilton, M. D., Prof. Princip. and Pract. of Surg. Published by request of the class. Rochester, 1843. (From the Author.)

Catalogue of the Trustees, Officers, and Students of the University of Pennsylvania. Philadelphia, 1843.

Fourth Annual Report of the Directors and Superintendent of the Ohio Lunatic Asylum, to the forty-first General Assembly, December 9, 1842. Columbus, 1842.

Third Annual Report of the Directors of the Maine Insane Hospital, December, 1842.

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia. November, December, 1842, January, 1843. (From the College.)

Transactions of the Society of Alumni of the College of Physicians and Surgeons of the University of the State of New York; No. 1. (From the Society.)

Report of the Pennsylvania Hospital for the Insane, for the year 1842. By Thomas J. Kirkbride, M. D., Physician to the Institution. Philadelphia, 1843. (From the Author.)

Proceedings of the Medical Convention of Ohio, held at Cincinnati, in May, 1842, with papers selected from those read before that body. Cincinnati, 1842.

London Medical Gazette. Oct., Nov., 1842, Jan., Feb. 1843. (In exchange.)

The British and Foreign Review, or Quarterly Journal of Practical Medicine and Surgery. January, 1843. (In exchange.)

The Edinburgh Medical and Surgical Journal. January, 1843. (In exchange.)

The Medico-Chirurgical Review. January, 1843. (In exchange.)

Provincial Medical Journal. Dec., 1842, Jan., Feb., 1843. (In exchange.)

The Dublin Medical Press. Dec., 1842, Jan., Feb., 1843. (In exchange.)

London and Edinburgh Monthly Journal of Medical Science. Edited by John Rose Cormack, M. D. Dec., 1842, Jan., Feb., 1843. (In exchange.)

Norsk Magazin for Lægevidenskaben. Redigeret af Chr. Boeck, A. Conradi, Chr. Heiberg, f. Hjort, F. Holst. Vols. 1, 2, 3, 4, and Pt. 1, Vol. 5. Christiania, 1840, 1841, 1842. (In exchange.)

Zeitschrift für die gesammte Medicin Herausgegeben. F. W. Oppenheim. Aug., Sept., Oct., Nov., 1842. (In exchange.)

Revue Médicale Française et Etrangère. July, Aug., Sept., 1842. (In exchange.)

Gazette Médicale de Paris. July, Aug., Sept., Oct., 1842. (In exchange.)

Journal des Connaissances Médico-Chirurgicales. July, Aug., Sept. Oct., 1842. (In exchange.)

Journal de Médecine et de Chirurgie pratiques. Aug., Sept., Oct., 1842. (In exchange.)

Journal des Connaissances Médicales pratiques et de Pharmacologie. July, Aug., Sept., Oct., 1842. (In exchange.)

L'Experience, Journal de Médecine et de Chirurgie. Oct., 1842. (In exchange.)

Journal de Pharmacie et de Chimie. July, Aug., Sept., Oct., 1842. (In exchange.)

The Boston Medical and Surgical Journal. January, Feb., March, 1843. (In exchange.)

The Western Lancet. Dec., 1842, Jan., Feb., 1843. (In exchange.) [The No. of this journal for Nov., 1842, has never been received.]

The New England Journal of Medicine and Surgery. Jan., 1843. (In exchange.)

The Western Journal of Medicine and Surgery. Dec., 1842, Jan., Feb., 1843. (In exchange.)

The American Journal of Science and Arts. Jan., 1843. (In exchange.)

The American Journal and Library of Dental Science. Dec., 1842. (In exchange.)

The New York Lancet. January and Feb., 1842. (In exchange.)

The American Journal of Pharmacy. Jan., 1843. (In exchange.)

The Select Medical Library and Bulletin of Medical Science. Jan., Feb., 1843. (In exchange.)

The Western and Southern Medical Recorder. Jan., 1843. (In exchange.)

The following is the statement respecting Dr. Dupré's account of the yellow fever of Key West, referred to in our No. for July last, and which we now feel called on to publish, a sufficient time having elapsed to afford Dr. D. an opportunity of verifying his account, and of which he has not availed himself.

We add the testimony of our esteemed collaborator, Dr. Thos. Sewall, of Washington, as to the entire credibility of Dr. Pinckney.

City of Washington, May 27, 1842.

SIR: Dr. Pinckney, the author of the following communication, has for some time been a resident physician at Key West, in the employment of the Government. He is personally and well known to me as a man of high moral and professional character. The most implicit confidence may be reposed in his statements.

Very truly and respectfully yours,

THOMAS SEWALL.

TO ISAAC HAYS, M. D.,

Ed. of the Am. Journal of Med. Sciences.

Key West, May 10, 1842.

DEAR SIR: Upon the appearance of the article on "the yellow fever at Key West, East Florida, by C. C. Dupré, M. D.," published in the last October No. of the American Journal of the Medical Sciences, I felt greatly disposed to write to the editor of that journal, and inform him, that the author of that article has availed himself of the remote and isolated situation of this island, and the consequent apparent immunity from exposure, to impose upon the editor and medical profession. But not having the honour of a personal acquaintance with the editor of that journal, a little reflection induced me to abandon the idea of writing to him, lest he might apprehend that my efforts to expose *one* imposture was but the attempt to practice *another*. But when you were pleased to urge me to communicate with you on the subject, I had no longer any excuse for deferring what had then become a duty to my profession.

The writer of this article says, "On my arrival here (Key West) in May last," &c., and "early in June I was called upon to visit a seaman, who had been sent ashore from a vessel in the harbour," &c., and whom he says he found sick of the "yellow fever of Cuba," and from whom he took "forty ounces of blood," and administered to him "thirty ounces of olive oil in three doses during the first three hours," and "permitted him to drink as much pine-apple water as he thought proper," &c. &c., giving detailed and minute accounts of cases, his visits, treatment, &c. Now, not a single case of yellow fever appeared on this island until the twenty-second day of June, and during the whole period of its continuance, having been a resident physician here for some years, I believe I visited every case that occurred: this I could easily do, as the entire population at that time did not exceed 450 souls, and was collected together in a little village. I neither heard nor saw anything of Dr. Dupré at that time, nor since, except in the Medical Journal. No one here, that I have conversed with, ever saw or heard of him; and it is believed that no physician from abroad visited this island during the prevalence of the yellow fever last summer. I cannot conceive how or where the Doctor so effectually concealed himself and his patients as to elude the observation of the entire population of a little village, in which every other stranger is at once noticed and observed. One would naturally suppose, that with his "olive and almond oils," his "pine-apple water," his "anti-mercurial treatment," and, above all, his great success in practice, that he would have become the lion and oracle of the little village. Of the causes which operated in producing the yellow fever here last summer, I may perhaps hereafter, and when I have more leisure, write you. But at present I only intend to notice a single one of the causes assigned by Dr. Dupré. He says, "vast quantities of sea-weed were deposited upon the beach, and its decomposition was assigned as one of the causes of the disease." It is believed that this deposit of sea-weed

was no larger during the last than previous summers. Sea-weed is being constantly thrown upon our shores, and its decomposition is all the while going on; and yet it has never been regarded here, either by the profession or laity, as contributing to the production of disease. The marvellous phenomenon of "myriads of flies dead upon the shores," which he mentions as increasing the apprehension of the citizens of a sickly season, is the mere figment of a creative wonder-working fancy. No such treatment as that indicated by Dr. Dupré was adopted in any case of yellow fever occurring on this island during the last summer. Neither "olive nor almond oil," nor "pine-apple water," nor the "anti-mercurial treatment" was employed either by physician or patient in a single instance. On the contrary, the treatment adopted was that recommended by our standard authors—bleeding freely in the forming and first stages of the disease, active cathartics, and the employment of such other remedies as the symptoms indicated. This course of treatment is believed to have been quite as successful as could have been expected under the circumstances.

I regret that the multiplicity of my engagements have prevented, for so long a time, my complying with your request, to write you upon the subject of this article, from Dr. Dupré; and now prevent, for the present, my writing you my opinions of the causes which produced the late epidemic on this island, its characteristic features, and the treatment employed by me.


With high regard I am, sir, very respectfully, your obedient servant,

T. A. PINCKNEY.

To THOMAS SEWALL, M. D., *Washington*.

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ERRATA.

Page 55, line 36 from top, for "five" read two.

56, lines 4 and 5 should be transposed to top of page.

71, line 25 from top, for "regore" read regorge.

76, note, line 7 from bottom, for "rouge" read ronge.

317, line 6 from bottom, dele "much."

THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

APRIL, 1843.

ARTICLE I.—*External Iliac Aneurism successfully treated by ligature to the Common Iliac Artery.* By EDWARD PEACE, M. D., one of the Surgeons of the Pennsylvania Hospital.

ISRAEL JONES, a bricklayer, aged 36, of healthy parents, a moderate drinker, with a remarkably strong constitution and large powerful frame, was admitted into the Pennsylvania Hospital the 22d day of August, 1842, with an inguinal tumour on the right side. Owing to the difficulty of procuring employment at his trade for the last two years, he had been engaged at the quarry at Leiperville in loading vessels with stone. About five months since, he perceived a small hard tumour, unattended with pain, of the size of a filbert, in his right groin, where he had felt something give way ten days before, whilst lifting a heavy stone for a wager. He, however, paid no attention to it for three weeks, when he found it had already attained the size of a walnut, and was rapidly enlarging, and could be seen and felt distinctly pulsating. About the beginning of the third month he first began to feel occasionally, and usually after severe exercise, or after the labour of the day, pain in the affected part and shooting along the front of the thigh; he had also considerable numbness along the course of the crural nerve; this sensation, like that of pain, was always produced as well as aggravated by exercise, and equally soon dissipated by rest and flexion of the limb. During the progress of the disease he contrived to work, till a fortnight since, when the sensibility of the tumour increased to such a degree, that he has been unable to rest in any other than a sitting posture, with his right leg in the position recommended by Pott for fractured thigh, that is, flexed and resting on the outside, to diminish as much as possible the tension in the groin. During the last week he experienced loss of appetite and inability to walk, or to sleep on account of the severity of the pain. Anodynes have been freely

taken, without however producing any relief. Cold water alone, afforded the slightest mitigation to his sufferings. He applied to two medical gentlemen, who recommended liniments and hot poultices. He then came under the observation of Dr. Griffith, a highly respectable physician in the northern part of the city, who immediately detected the true nature of the disease, and recommended him to be placed under my care. He had undergone no constitutional treatment further than a reduction of diet and entire abstinence from animal food for a few days anterior to his reception into the hospital.

Upon examining the patient on the following day, we found that an opiate had procured him short intervals of sleep, which had considerably refreshed him, and he expressed himself as having had a more comfortable night than he had experienced for some weeks. He is pale, but not much emaciated, still very muscular, has lost some strength, his appetite moderately good, and in other respects his general health is not seriously impaired.

The tumour is red, injected and elastic, and is very sensitive to the slightest pressure; it is hard, and particularly so at its lower portion, and expands and contracts at each pulsation with considerable force, and equally in every direction, the wave can be felt three inches below its lower margin. Pressure upon the aorta quiets the aneurismal throb and completely checks the flow of blood, and also diminishes sensibly the volume of the tumour. The aneurismal thrill is but faintly heard. The pulsation of the popliteal and anterior tibial arteries can be felt, but less strongly than those of the other side. No marked diminution can be detected in the size of the right limb, the sensibility of which is natural. The tumour is of an irregular pyriform shape, extending in length from three inches below, to three inches above Poupart's ligament, and in breadth, five inches from the anterior superior spinous process of the ilium to within an inch and a half of the median line, and to about the same distance above the crest of the pubis. The tumour (the greatest transverse diameter of which is at the upper part) is divided into two portions by a shallow depression, caused by the tension of the fibres of Poupart's ligament, which have yielded but slightly to the pressure. The tumour dips deeply into the pelvis, involving a considerable portion of the external iliac, but to what extent it is impossible now to ascertain. The patient has a very anxious countenance, complains much of pain in the knee, and has severe paroxysms of spasm in the calf of his leg.

By perfect rest and keeping him on a regulated diet, and application of equal parts of laudanum and water for four days, all the local symptoms have moderated; and with the exception of total loss of sleep, the patient is much more comfortable. A consultation of the surgeons of the house was held, and it was determined to apply on the following day a ligature above the tumour. Upon representing to the patient the nature of the disease, the difficulty of the operation, and the uncertainty of the result, he cheerfully submitted to be governed entirely by our advice. Ordered an ounce of castor oil immediately. Eighty drops of laudanum to be given two hours previous to 11 o'clock, the

hour appointed for the operation; an enema to be administered at the same time. The patient was requested to abstain from all nourishment during the morning, so as to guard as much as possible against protusion of the intestines, which had complicated so seriously many of the previous operations. By these precautions we were enabled by pressing upon the aorta to command entirely the flow of blood through the tumour, which would have been of great importance in case of any hemorrhage during the operation.

The patient having had his groin shaved, and placed upon a table of a convenient height, on the morning of the 29th of August, before the medical class, assisted by my colleagues, Drs. Randolph and Norris, and the experience of Dr. J. Rhea Barton, I proceeded to make an incision seven inches in length through the integuments, commencing at a point, on a level with the umbilicus, two inches within, and three inches above the anterior superior spinous process of the ilium, and approaching to within an inch of Poupart's ligament, and terminating one half an inch above the external ring; this divided the arteria ad cutem, which was twisted by the artery forceps, no ligature was required; next the superficial fascia was divided, then the tendon of the external oblique was exposed, nicked, and with the aid of a director, was cut the whole length of the first incision as far inwards as the spermatic cord. There was considerable difficulty in raising up the lower edge of the tendon of the internal oblique and transversalis, owing to the thickening and induration of the surrounding tissues from the pressure of the tumour; this was finally accomplished by means of the handle of the knife, and a careful division of the layers as they presented themselves, until we arrived at the peritoneum, having cut some of the fleshy fibres of the transversalis; the peritoneum was then carefully and with some difficulty detached from the tumour, which was found to involve a great portion of the external iliac artery; we continued raising the peritoneum till we came to a part of the artery which appeared to be healthy, this was about one half an inch above the bifurcation of the common iliac. The artery was separated from the vein by the finger nail, and a silk ligature was passed underneath from within outwards, by means of the admirable aneurismal needle of Professor Gibson. Notwithstanding the precautions that we had taken to have the bowels well evacuated, and the length of our first incision, it was some time before we were able to get a view of the curve of the needle still held under the artery, on account of the projection of the tumour and the protusion of the abdominal contents. Finally by means of broad curved steel spatulas, and drawing forward the artery by means of the aneurismal needle that was underneath, we managed to get a view of the common iliac artery, and the iliac vein underneath, on the side of the sacro-vertebral promontory, with the ureter crossing the artery, and attached to the raised peritoneum. The ligature was without the slightest difficulty passed out of the wound by the watch spring of the needle, and was tied by the tips of the fingers with a simple double knot; both ends of the ligature were allowed to remain hanging to-

gether from the wound. Immediately the pulsation of the tumour ceased, and its volume sensibly diminished. The edges of the wound were brought together by three interrupted sutures and adhesive plaster, and dressed with lint spread with cerate, and retained by two adhesive strips. The patient was removed to his bed, placed on his back, his leg slightly raised by a pillow under the knee, his shoulders raised, his body flexed and inclined towards the affected side. The needle was placed under the artery in seventeen minutes, but thirty minutes more were required before the patient was removed to his bed. He bore the first steps of the operation well, without a murmur, but the manipulation required to get a view of the exact position of the ligature gave great pain, and produced excessive nervous prostration. Wine and water were freely given, and in an hour afterwards considerable reaction had taken place. Pulse 92; previous to the operation it was 84. Skin warm and moist, entire insensibility below the middle of the thigh, and getting cold. Limb to be enveloped in carded wool.

3 P. M. Pulse 92; thigh and leg warmer; numbness and insensibility complete below the knee. Temperature at the knee of the affected side 92° Fahr., at the foot 82°; of opposite limb 94°. Some fulness of saphena vein, with slight œdema of foot. Gentle frictions with the hand, especially to the foot and toes; in three hours time the leg was warm to the ankle; numbness of leg and foot gone, and sensibility slightly returned; no alteration of pulse; pain at the sole of the foot.

12 P. M. Pulse 92; soft and easily compressed; no thirst; no urination; limb warm as far down as the toes, sensibility restored to the instep; in good spirits, and thinks he will sleep, as he is now, for the first time for weeks, free from pain. Ordered barley water, and sol. morph. ʒiij.

28th, 10 A. M. The morphia had to be repeated during the night; restless during the early part of the night, but towards morning slept five hours and awoke much refreshed, with the anxious expression of face gone; pulse 92, soft; tongue clean; skin moist; copious urination. Temperature of leg natural, of toes 84°, and their sensibility evidently returning; no pain in tumour, and very slight uneasiness in wound. Towards evening the pulse rose to 96, full, but soft and compressible, with some numbness of leg and burning of the foot and toes, which were much relieved by gentle frictions; removed the carded wool, keeping only the toes enveloped. Iced toast water during the day, and sol. morph. ʒiij. at night.

29th. Passed a comfortable night; pulse 92; skin moist; appetite good; no uneasiness at tumour or wound; fulness of saphena vein gone; numbness yet of toes, with some heat in foot, but no material pain; these uneasy feelings were readily relieved by friction of the hand; temperature of toes 84°; in the afternoon a natural dejection; anxious for nourishment; continues his drinks, and morphia to be given in case of inability to sleep.

30th. No sleep, till the administration of the third of a grain of morphia; then passed a comfortable night, but awoke not feeling well; pulse 92; skin

dry; some thirst; no appetite; no urination for sixteen hours; fulness above the pubis, with some pain; ordered a common enema and a warm cataplasm over hypogastric region. The enema produced a natural evacuation, which was soon followed by relief of the retention of urine; the skin became moist; thirst gone, and appetite returned. Sol. morph. 3ii.

31st. Slept the whole night; pulse 92; pain in right knee, with some numbness; temperature of toes 84°; dry friction every two hours; removed the dressing; found that the wound had united by the first intention, in rather more than one-third of its length internally, suppuration moderate, and of a healthy character. The tumour has sensibly diminished; firmer, with its surface free from discoloration, the capillary circulation of leg and foot still sluggish.

Sept. 1st. Slept well; pulse 84; skin moist; less pain of knee than yesterday. Temperature of right thigh 95°; warmer than the left, which is 93°; toes 88°; capillary circulation entirely restored throughout the affected limb; dejections daily without the aid of enema; diet, tea and toast in the morning, and rice and molasses at dinner. On the afternoon of the next day, the leg was swollen below the knee, and not sensitive to pressure; pain shooting up from toes to knee. Limb directed to be elevated and kept uncovered during the night. Sol. morph. 3ij.

3d. Slept well; pulse 80; leg less swollen and cooler; toes for the first time of a natural temperature. The tumour is now swollen, with heat and redness at its summit, more than one-half of the wound has united; the suppuration trifling; slight flush along the edges, especially near the ligature, removed one suture, and directed a lotion of lead water.

4th. Rested well; tumefaction diminishing in the leg and tumour, which is less painful and cooler; continue the lead water. The following day there was some return of the pain at the knee, and of the swelling, which were relieved by elevation of the limb, and frictions with soap liniment. On the next day the remaining sutures were removed, and he continued to improve till the morning of the 7th, when we found that he had been unable to sleep the previous night, and had changed his position from the right to the left side; is now suffering from intense pain of a throbbing character in the tumour, which is hot, red and swollen, without, however, any constitutional symptoms. In a few hours these somewhat alarming symptoms were relieved by repeated applications of lint saturated with laudanum.

8th. The swelling nearly gone; pain severe, but much less than yesterday; tumour less inflamed, and decidedly firmer and smaller; continue the laudanum dressing, which gives great comfort to the patient. These unpleasant symptoms were probably brought on by the imprudence of the patient, as his attendants find it difficult to convince him of the importance of remaining quiet, still more to cause him to respect their directions. The wound is now closed with the exception of the sinus occupied by the ligature; the suppuration trifling, barely sufficient to soil the dressing; nothing occurred further worthy of recording, till the thirty-second day, when the

ligature was evidently loose, and three days afterwards it came away. The noose was covered with plastic lymph and of a small size, showing it to have been tightly tied.

On the fourth day after the removal of the ligature, we found the patient walking about his room; the discharge from the sinus slight, the orifice of which is surrounded by large flabby granulations, which were allowed to remain undisturbed to prevent the external orifice from closing.

Oct. 8th. Leaves the hospital to day for home, against our advice. The sinus is now filled up—the large granulations cauterized. There has been a progressive diminution in the bulk of the tumour, which is now less than one-half of its original size, and free from all pain. No return of pulsation in the popliteal or tibial arteries. The only artery that can be felt pulsating is the pedial, and that very faintly.*

23d. Walked four miles to see me—wound cicatrized, tumour smaller and perfectly hard—a few days after this, he very imprudently engaged to load a vessel with stone, but at the end of the job he experienced some pain in his right groin, which obliged him to desist from work for some days, since which, he has remained well.

Feb. 1st, 1843. I had the pleasure of seeing to-day, five months since the operation, the patient who presented himself at the Hospital for examination. The tumour is now of the size of a filbert, situate a little above Poupart's ligament. The line of incision has kept pace with the contraction of the integument over the tumour, and the cicatrix is only three inches in length. He is now able to provide for his family, and is in the enjoyment of robust health.

REMARKS.—For reasons which have been given at length in an account of a case of inguinal aneurism, operated on by me in Oct. 1841, (see this Journal for Jan. 1842, page 250,) no more time was allowed to elapse than was necessary to reduce the local symptoms produced by the removal of the patient to the hospital before an operation was resorted to.

After the immediate effects of the application of the ligature were over, we were struck with the mildness of the symptoms. With the exception of the spasmodic stricture of the fourth day (which according to Sir Astley Cooper is a very common symptom after operation for inguinal aneurism), and the inflammation of the tumour on the tenth day, which appeared to be brought on by the imprudence of the patient, very little treatment was required, and we had only to wait patiently for the separation of the ligature. Many surgeons recommend the application of a small ligature, and cutting off one of the ends as causing less irritation and a more speedy separation, and allowing the better consolidation of the soft parts contiguous to the wound and its more rapid cicatrization. Some have advised the cutting off both ends of the ligature to lessen the irritation, and to allow the whole extent of the wound to be united

* To Dr. Edward Hartshorne, resident physician, under whose judicious charge the patient was placed, I am much indebted for the use of his copious notes.

by adhesion, and the ultimate discharge of the noose of the ligature by an orifice formed in the cicatrix. 'The inflammation that must supervene *necessary* to the displacement of the ligature is sometimes a cause of extensive abscesses, which of themselves may lead to secondary hemorrhage; and in a case like the present, where the ligature is deeply placed, what certainty have we that it may not take some unusual route, and during its progress of ulceration involve some of the important organs in the neighbourhood? We have given a preference to a large ligature to allow sufficient time for perfect adhesion of the internal coats of the artery and the condensation of the fibrin of the coagulum preparatory to the total obliteration of its cavity. Both ends of the ligature were allowed to remain hanging together out of the wound, to give a free vent to any collection of pus that might take place, and far from having any fears from the irritation of the ligature, we permitted nature unaided to throw it off only as fast as she filled the sinus from the bottom with granulations.

Our line of incision was longer and more vertical, and was a modification of the operation of Sir Astley Cooper for the external iliac, but still retaining the great advantage of his method—that of the greater facility of separating safely the peritoneum, which consideration we think of the greatest importance, on account of the danger of peritonitis and the prostration of the vital powers from the necessary handling of the intestines to prevent their interfering with the latter steps of the operation. In order to appreciate justly the danger from the application of a ligature to the primitive iliac, the following account of all the cases that have occurred is given.

The *first* was an unfavourable case operated on by Prof. Gibson, in 1812. (*Am. Med. Recorder*, Jan. 1820, p. 185.) 'The patient had received a wound from a musket-ball, which passed through the intestines and opened the common iliac; two ligatures were placed upon that vessel above and below the point of injury—the peritoneum was cut through in the operation. There was a fair prospect of recovery till the ninth day, when hemorrhage occurred and death took place on the fifteenth day. The intestines were glued to each other, bearing evident marks of peritoneal inflammation. The upper ligature was detached from the artery, the coats of which retained the impression of the ligature, but no union whatever had taken place.

The *second* was a favourable case of external iliac aneurism, attributed to lifting heavy logs, operated on by Prof. Mott, of New York, and reported in the 1st vol. of this Journal, p. 156. The peritoneum was not opened, ligature removed on the eighteenth day. The patient, a man 33 years of age, recovered perfectly. This was the first successful operation.

The *third* was a favourable case of external iliac aneurism, operated on by Sir Philip Crampton, (*Am. Journ. Med. Sc.* Feb. 1831, p. 500,) unsuccessful. The peritoneum was not opened. On the ninth day the ligature of moistened catgut came away. On the eleventh day, whilst the patient, a man æt. 30, was sitting up to take some gruel, the blood gushed from the wound and death

ensued in less than a minute. Dissection disclosed that the internal and middle coats had been completely divided, but the animal ligature had been softened and thrown off before adhesion at the point of deligation had taken place.

The *fourth* was an unfavourable case, occurring in a patient *ætat.* 8, who underwent an amputation for necrosis of femur, followed by secondary hemorrhage. (*Lond. Med. Gaz.*, April, 1830.) On the eighth day after amputation hemorrhage occurred, which could not be arrested by the usual applications. A ligature was applied by Mr. Liston, to the common iliac; the peritoneum was not opened; the hemorrhage was arrested, but the patient died in twenty-four hours, apparently from the previous exhaustion by loss of blood.

The *fifth* was a favourable case, and successful as far as the operation was concerned. The subject of it was a lady, age not stated, with supposed gluteal aneurism, operated on by Mr. Guthrie. (*Lond. Med. and Surg. Journ.*, Aug. 1834.) The peritoneum was nicked accidentally, but the ligature was tied without passing through the peritoneum. The ligature came away on the twenty-sixth day, and was followed by a sensible diminution of the tumour, and a general amelioration of all her symptoms. At the end of four months the tumour began again to increase, and in eight months after the operation she died. On examination of the tumour, which occupied the whole hip, it proved to be composed of soft medullary matter, which had destroyed the bones, and in which the head of the femur was lying loose. On searching for an aneurismal sac none could be found, but the gluteal and sciatic arteries were traced into the medullary tumour, which gave it the pulsatory motion felt before the operation. At the conclusion of this instructive case, the author offers what appears to me a very valuable suggestion, viz. "That of tying the common iliac of the affected side, by making the incision through the opposite side, when the disease has extended too far up to allow of its being done above." I certainly should give a preference to an operation of this kind, in a case where it was thought impracticable to operate on the affected side without opening the peritoneal cavity.

The *sixth* was a favourable case of external iliac aneurism, attributed to the kick of a horse, successful, operated on by Dr. Salomon, of St. Petersburg. (*American Journ. Med. Sc.* Aug. 1838, p. 474, and May 1840, p. 218.) The peritoneum not opened; no unfavourable symptoms, except superficial sloughs from the fifth to the tenth day on the outer side of the foot. Ligature came away on the thirty-second day, and at the end of two months the patient, a man 38 years of age, was sent home well. Ten months after the operation he died of lumbar abscess.

The *seventh* was an unfavourable case of external iliac aneurism, unsuccessful, in a man *ætat.* 31, operated on by Mr. Syme. (*Am. Journ. Med. Sci.* Feb. 1839.) Mortification of the leg below the knee had commenced, when it was resolved to tie the common iliac with the hope that after it was done, the process of mortification might be stopped by amputation of the thigh. Tumour had extended to within an inch of the umbilicus, and yet the ope-

rator with his curved incision had no difficulty in separating the peritoneum, though there was some embarrassment in passing the ligature. The tumour became smaller; the coldness and discoloration of the limb extended above the knee. On the fourth day, amputation of the thigh was performed, close above the discoloured part of the limb. The next day death took place.

The *eighth* was a favourable case of aneurism of the external iliac, attributed to a violent exertion, successfully operated on by Deguise. (*Gaz. Méd. de Paris*, May, 1840.) During the operation the aneurismal sac was opened. The hemorrhage was arrested by pressure upon the external iliac; it was then discovered that the artery had given way under the ligature. The common iliac was then tied. The peritoneum was not opened. Fearing that secondary hemorrhage might follow from the wounded sac, a ligature was placed around the femoral artery below the pubis, in doing which the vein was wounded, and had also to be secured. Notwithstanding these serious complications, the case terminated favourably. The ligature of the femoral vein came away on the eighth day, that of the primitive iliac, the twenty-seventh, the external iliac on the twenty-ninth, and the femoral artery on the fortieth.

The *ninth* was a case of external iliac aneurism, unfavourable, operated on by Dr. Pirogoff. The latter part of this case is to be found in the *New York Journ. of Med. and Surg.* Jan. 1841, p. 235, taken from *Zeitschrift für die gesammte Medicin*; but the translator has not given the date, and I have not been able to find the original report. On the sixth day after a ligature was placed upon the external iliac, it came away with a portion of sloughing cellular tissue with secondary hemorrhage. An incision was made above the former one; but when the peritoneum was exposed, it was found to be so adherent in the neighbourhood of the first wound, that it was torn by the finger, and a second time over the artery, to apply the ligature. On the eighth day the wound became gangrenous. On the fifteenth, arterial hemorrhage occurred, and on the following day he died. Above the ligature was a coagulum partly of blood and partly of lymph, three-quarters of an inch in length, loosely adhering to its inner coat. This clot was broken through at a small spot, from which undoubtedly the hemorrhage occurred.

The *tenth* case occurred in a man æt. 20, with aneurism of the external iliac, operated on by Dr. Alfred Post. (*N. Y. Med. & Surg. Jour.* Oct. 1840, p. 459.) This case was rendered unfavourable by the difficulty of forming an accurate diagnosis. Nine days after the entrance of the patient into the hospital, a lancet was introduced into the tumour to the depth of an inch, but no fluid escaped. An explorative incision was made through the integuments covering the tumour, sufficient to admit the tip of the finger into a cavity containing coagulated blood, and a compress was applied. In the night there was a gush of a pint of arterial blood which was arrested by a compress and an appropriate bandage. On the next day, a ligature to the primitive iliac was determined upon, but the patient would not consent to this till the next day, when his surgeons

deeming it impracticable to expose the iliac artery without opening the peritoneal cavity, a vertical incision six inches in length was made through the abdominal parieties and peritoneum, and the ligature applied. The pain was greatly relieved, but he gradually sank, and died in twenty-four hours after the operation. The death of the patient was attributed to exhaustion from severe and long continued pain, loss of blood following the explorative incision, and the superadded shock of the last operation.

The *eleventh* was a case of external iliac aneurism, in a man, operated on by Dr. Stevens, in 1836, at the New York Hospital. The case has never been reported. Dr. Norris, to whom the surgical world is already indebted for so much valuable statistical information, informs me that the man died ten days after the operation, of peritonitis. The preparation is preserved in the museum of the hospital.

These, with the case here given, make twelve cases in which the primitive iliac has been tied, of which five were successful, and seven unsuccessful.

In three cases not aneurismal, two were unsuccessful, and one, the case of medullary sarcoma, successful.

Nine were cases of aneurism of the external iliac, all males—six of the right side, two of the left, and one not given. The ages of seven that are noted are between the ages of twenty and forty-two, of which five are between those of thirty and forty. No assignable cause is given but in four cases; three are attributed to lifting heavy loads, and one to the kick of a horse. The sex, the age, and causes assigned are in accordance with the opinions commonly received of the history of aneurism.

In the nine cases of aneurism, four were cured, and five died. Of the five favourable cases, (viz. those of Mott, Crampton, Salomon, Deguise, and the present case,) by which we mean aneurisms without any complication previous to the operation, four were cured, one only died, and that must be attributed to the use of the animal ligature. In neither of these cases was the peritoneum opened.

We have placed the case of Dr. Stevens among the unfavourable ones, judging rather from the result than from sufficient knowledge of the circumstances attendant upon the case. If we omit this, which proved fatal from peritonitis, we have three unfavourable cases terminating fatally, in two of which the peritoneum was opened. We therefore come to the conclusion, that in a case of aneurism of the external iliac artery in its early stage, and where we are not obliged to cut the peritoneum, the application of a ligature to the common iliac artery is not a very dangerous operation.

ART. II.—*On the Active Principle of Malaria.* By DANIEL P. GARDNER, M. D., Professor of Chemistry, &c. in Hampden Sidney College, Va. &c.

THE subject will be discussed in the form of propositions, for the better classification of details. The profession are therefore made the judges in the matter, and their acceptance or rejection of the arguments brought forward, will substantiate or destroy the theory advocated in the following pages. The propositions, under which the facts adduced to show the nature of the active principle of malaria are classified, are:

1st. Sulphuretted hydrogen gas exists in the stagnant waters, and atmosphere of certain marshes.

2d. The character of malarious regions is similar to that of those in which sulphuretted hydrogen is generated.

3d. Certain agents have been supposed to give activity to the exhalations arising from marshes, called malaria.

4th. The properties of malaria are fully recognised by the profession.

5th. Sulphuretted hydrogen is the active agent in the production of those forms of malarious fever met on the sea coast, and the diseases belonging to the same class found inland.

PROPOSITION I. *Sulphuretted hydrogen gas exists in the stagnant waters, and atmosphere of certain marshes.*

1. Numerous conjectures have been made concerning the cause of malaria. Nearly every agent, from carbonic acid to certain theoretical germs, have been brought forward as the deleterious matter. Amongst these, sulphuretted hydrogen has occupied a prominent position. But all attempts to demonstrate its existence had failed, until Professor Daniel, in 1841, succeeded in detecting large quantities of the gas in some specimens of water, submitted to his notice by the British admiralty for analysis. These specimens were from the African rivers Bonny, Sierra Leone, Mooney, Congo, and the adjacent seas. Mr. Garden, of London, also found the same gas in water from the Bonny and Lagos. Dr. Marcet, in the Yellow seas. All these localities are reputed for their insalubrity, and it was natural to attribute to the gas some share in producing it.

2. But it is not only on the pestiferous shores of Africa that malaria exists. Practitioners in the United States have designated numerous localities which are remarkable for the peculiar diseases attributed to malaria. It becomes therefore an interesting question to ascertain whether sulphuretted hydrogen exists in all these places. The labour of one individual is not competent to the task, but it may become the lot of one to direct the attention of the pro-

fession, and put into their hands the means of deciding this much vexed and important question.

3. The difficulty, which has been found insuperable, in testing for this gas, is the extremely small quantity in which it exists in the air. A sufficient bulk of atmospheric air could not be submitted to examination to detect its presence. But instead of securing specimens from marshes, it appears extraordinary, that until very lately, the air or at least the stagnant water had not been examined on the spot. With a view of effecting this examination, I considered how an apparatus might be constructed to allow large volumes of gas to pass constantly across some reagent calculated to detect sulphur. The fruit of my labours was unsatisfactory, and I was reduced to the necessity of bringing the reagent simply in contact with the air, and water, without being able to increase the quantities of the former coming directly across it. The substance best calculated to answer all the necessary indications is silver, which when properly prepared is an exceedingly delicate test for sulphur, and not liable to be attacked by the many agents which act upon lead, copper, &c.

4. The silver must present a pure surface. To effect this, it should be kept in contact with a boiling solution of caustic potash and alum. The process must be continued through one or two changes of the solution, if the metal be very unclean. The last should be evaporated to dryness, for by this means the potash is made to act upon any copper that may be present as an adulteration. When the process has been successful, the silver presents a granulated surface of a dull lustre, and immaculate purity. The coins in circulation are beautifully cleaned by this method, and become as good reagents as any other pieces of silver. They were used in the experiments instituted by myself.

5. The delicacy of pure silver as a test for sulphuretted hydrogen is exceedingly great. A solution was made containing one drop of hydrosulphate of ammonia in 120,000 grs. of water. A five cent piece placed in it was discoloured in the course of a few minutes, and became of a decided light yellowish brown colour in two hours, without agitation. This is by no means the minimum which it will detect. The amount of sulphur present in the solution was determined by precipitating the whole of that substance out of a known quantity of the hydrosulphate by means of the nitrate of lead, collecting the precipitate, washing, drying and weighing it; allowing the ingredients of the sulphuret of lead to be in the ratio of their equivalents, or as 104 to 16.1, the quantity of sulphur present in a drop was found to be $\frac{1}{25}$ th of a grain. So that metallic silver, perfectly pure, is able to detect sulphur in a solution containing one part in three millions of water. As a means of determining the amount of sulphuretted hydrogen in mineral waters it is without comparison the best test, for all the addition to the weight of the silver is pure sulphur, and the metal is not acted upon by carbonic acid.

which is nearly always present, and difficult to separate from the sulphuretted hydrogen.

6. Having learnt the delicacy of silver, it appeared to me, that by long exposure to the action of the water, and air of marshes, it might become stained by sulphuretted hydrogen, if that gas existed in such places. Accordingly, a number of prepared coins were disposed in suitable positions for its detection. Three small rivers, Buffalo, Briery, and Appomattox were selected, and coins suspended in them by a stout silk thread, passed through a perforation made in them before cleaning; the stagnant water lying upon the surface of marshes, and produced by sluggish springs, was also tested in the same way, not allowing the metal to touch the soil, but suspending it from the branches of shrubs. The currents which set out from cold springs, and which are known in the country as spring branches, were also examined in the same way, at different points from their origin. In the air, over rivers, and marshes, coins were exposed. The description of money used was various, five cents, ten cents, twelve and a half cents, and twenty-five cent pieces were all taken, according to the change in my possession. They were first perforated in a marked place, so as to be recognized, next cleaned and dried, then carefully weighed, furnished with a string, and lastly carried to the place selected. Great care was taken to keep the surface unsullied by the touch of the finger or otherwise. The number of pieces used was thirty, and all the suspected places within a circle whose diameter is seven miles were examined.

7. In twenty-two hours after the first set of these coins were deposited, two were found distinctly stained, one in a marsh, and the other in a spring branch flowing through a marshy piece of land, and receiving constant additions of stagnant water from it. Two other coins immersed for the same time in the Buffalo river exhibited no sign of change. This great difference is worthy of remark, and points out the locality wherein the gas is generated. It was found to be a law, from repeated examination, that the shallow waters of marshes contained the most, and rivers the least amount of gas; the coins placed in the latter sometimes required a month, and those suspended in air even more time for discoloration. In all the experiments I made, the silver was ultimately stained.

8. The discovery of sulphuretted hydrogen in the air, is a new and important feature of these researches. In one coin placed over the Buffalo river it required five weeks to produce the sulphuret stain, but a quarter of a dollar suspended eighteen inches from the soil, in a marsh over stagnant spring water, was discoloured in a week. In every case where the gas was detected rapidly in water it was found in the air over it, in a greater or less time. This must necessarily be the case, for a solution of sulphuretted hydrogen exposed to the atmosphere must continually give off that gas, by exosmose, until the air and water contain equal quantities. Hence the gas abounds where it is generated, both in the air and water, and diminishes in

quantity as the distance increases from the place of its production. That sulphuretted hydrogen exists in air must be admitted, when the discoloration of white lead paint in cities is considered; the houses painted with it in London, and Paris, become of a light dingy yellow in a few years. Plate, and other silver wares lose their polish and become tarnished in houses. These changes are undoubtedly due to sulphur existing in the atmosphere of such places.

9. That the discoloration observed in the coins was due to the formation of a sulphuret was proved directly by the reduction of the silver. Two pieces were selected, and weighed, after an exposure of ten days. They had both acquired $\frac{2}{100}$ ths of a grain access of weight, but as their diameters were not similar, the increase was not in the ratio of their surfaces, but as 26 to 35. This was due to the difference of the places from which they had been taken, the one from a marsh, the other from a spring branch. The process adopted for the detection of sulphur on the coin, was by passing a stream of hydrogen gas, over the metal inclosed in a green glass tube, and made red hot; the effluent gas discoloured nitrate of silver in the manner of sulphuretted hydrogen.

10. Having proved that sulphur exists in these localities, my next object was to examine the causes of it. In the foregoing experiments, the immediate source was a marsh, containing much decaying vegetable matter, a rich alluvial soil saturated with *spring* water, or that which had percolated through the soil, and heated by the temperature of midsummer. These four conditions are all worthy of examination.

11. Alluvial deposits contain much vegetable matter, their blackness is due to it in some measure. This vegetable matter is in a constant state of decay, the rapidity of which is proportional to the access of oxygen, and the warmth of the season. Such accumulations are therefore interesting, as laboratories in which powerful affinities are bringing about numerous striking changes. They form the scene of many important events worthy of close attention. Let a sulphate be brought within the reach of these powerfully deoxidizing masses, and it will be decomposed by the destruction of its acid.

12. The second element, of the sites in which sulphuretted hydrogen was detected by me, is decaying vegetation. The effect of this, differs in no wise from the action of the organic constituents of alluvion. In its decay, carbon is left in excess, and exerts all its powerful affinities to assume the gaseous form. But vegetables contain certain inorganic constituents, which are of considerable interest in the changes under contemplation. Of these, the sulphates of lime, soda, potassa, and magnesia have been detected. In the decay of a plant containing any of these salts, the results will depend upon the presence or absence of water. If dry, they will be unchanged; but if water and heat be present, the sulphuric acid will be decomposed. The leaf contains a large proportion of the salts existing in a plant.

13. But of all the agents discovered in these localities, spring water is the most important. It is usually impure. It contains the soluble salts of the land through which it has percolated. These must from the nature of the case differ. Murates, sulphates, phosphates and carbonates have been found by different analysts. Spring water is seldom free from sulphate of lime, or magnesia—the former imparts to it the quality denominated hardness. When these ingredients are present in any quantity, and the water is kept in contact with decaying vegetable matter, they are decomposed, oxygen is abstracted and sulphurets are produced—the latter in their turn, yield sulphuretted hydrogen with the first nascent hydrogen they encounter. The final compound of these bases, is most probably a carbonate. That sulphuretted hydrogen is thus produced, is a matter of demonstration. Prof. Daniel put decaying leaves together with water containing sulphate of soda in a jar, and subjected them to the action of a summer's heat; in three months, sulphuretted hydrogen was abundantly given off, and the salts decomposed. If no sulphate be present, either in the vegetable matter or water, the gas will not be given off. Hence, to apply the result of this decisive experiment to our purpose, no locality, the soil of which is destitute of the sulphates, can generate the deleterious gas.

Thus we have reached a generalisation which is indisputable, and of the greatest practical importance. For it affords the means of discriminating, even in the most unpromising situations, between a healthy and insalubrious site.

To ascertain the presence of sulphates, the addition of a few drops of a solution of chloride of barium is all that is necessary. If the cloudy precipitate that falls is unsatisfactory, boil the spring water until it is evaporated to a small compass, and test again. If a sulphate be present, the white, dense sulphate of baryta will fall, a salt that cannot be mistaken from its utter insolubility. This test is so simple, that any member of the profession can decide upon the existence of sulphates, and therefore of sulphuretted hydrogen, in any place whatsoever. The test for the gas detailed in sections 4, 5, 6, is not less simple, and therefore, there are placed in his hands both the theoretical and experimental means of deciding on this grave question, at all times.

It is also a fact, no less valuable than the preceding, that the practitioner is enabled to decide, by analysis, the comparative amount of the deleterious gas in different situations. It is not extent of surface, depth of soil, geological structure, or the amount of evaporating water that concerns him, but the quantity of the sulphates. This point I have had the means of examining, during several years, in consequence of the analysis of many specimens of sulphur, and other mineral waters, from the counties of Prince Edward, Cumberland, Buckingham, Lunenburg, and Halifax in this state. Those waters, containing the greatest amount of the sulphates, yielded larger quantities of sulphuretted hydrogen than those which contained but

little of these salts. All the specimens of sulphur water, examined by me, were from alluvial deposits. Two saline waters contained sulphate of magnesia and lime, but they were procured from rocky places, in which no vegetable matter existed. Three specimens were from alluvial situations, but contained no sulphates, and therefore no sulphuretted hydrogen gas. But few mineral waters, are as rich in sulphates as the ocean. Schweitzer found in 1000 grs. of water from the British Channel, 3.7 grs. of sulphate of lime, and magnesia. Laurens 7.17 grs. in the same bulk from the Mediterranean. Murray, in a wine pint, 21.6 grs. of sulphate of magnesia. Prof. Daniel, from 80 to 120 grs. of sulphuric acid in a gallon of the waters from the African coast. The sea stations are the most dangerous, when vegetable matters are present, as on alluvial coasts; but the open expanse of old ocean is without the least trace of malaria. Rivers, before they become salt by contact with the ocean, contain less saline matters than marshes, in consequence of the showers of rain water which reach them without percolating the soil and dissolving out the sulphates incorporated in it.

14. The temperature must be warm, for the production of these changes in the sulphates. The amount of heat necessary to commence the decomposition is unknown, and can be determined only by experiment. It is known to be above the freezing point, for water is necessary. An elevated temperature is highly favourable, and the more elevated, so long as water remains, the more favourable it is for the production of the gas. This is an immediate consequence of chemical laws, and is further borne out by the quantities of sulphuretted hydrogen discovered in the tropical waters of Africa and China. In the same proportion, the fatality of malarious diseases increases. Temperature is, therefore, an element in our researches, not to be overlooked.

15. It is not to be understood, that because sulphates are found in certain waters, the gas must exist in them also—for it is not the presence of one condition, but of all, that produces the results under consideration. So sulphuretted hydrogen may be found in waters which contain no sulphates—this appears to be the case in the mineral waters of Aix la Chapelle analysed by Bergman; Moffat by Garnet, and Harrowgate in England. Such exceptions point out to our attention, the existence of other sources of the gas. It is believed that at Harrowgate, the destruction of large quantities of pyrites yields it; the iron combining with oxygen gives up its sulphur to nascent hydrogen. Other minerals, and districts may yield the gas, without disparagement to the fact adduced. As far as my examinations in Virginia go, I believe that sulphuretted hydrogen is produced in springs by the process under examination. Dr. Amédée Foutan suggests the same process as yielding the gas in the waters of Germany, Belgium, Switzerland and Savoy.

16. Thus, having proved that sulphuretted hydrogen exists in the air, and water of marshes—having showed the usual sources of this substance, and the process by which it is eliminated—it remains to show that the localities

which are remarkable for the production of malaria agree with those fitted to generate the gas. The circumstances under which sulphuretted hydrogen is most abundantly produced are—sufficient water not to dilute the gas, exposure of the soil to the air, high temperature, and abundant supplies of vegetable matter and soluble sulphates. Hence sea-marshes, the deltas of tropical rivers containing salt water, &c. exposed to certain states of drought, are the most prolific sources of *sulphuretted hydrogen* and *malaria*. Nor is the bilge water of ships, in contact with decaying wood, or other vegetable matter, to be overlooked.

PROPOSITION II.—*The character of malarious regions is similar to that of those in which sulphuretted hydrogen is generated.*

17. In a narrative of an expedition into the interior of Africa, along the river Niger, by Messrs. Laird and Oldfield, the following remarks occur. "The principal predisposing causes of the awful mortality, were in my opinion the sudden change from the open sea to a narrow and winding river, the want of the sea-breeze, and the prevalence of the deadly miasma, to which we are nightly exposed from the surrounding swamps. The horrid sickening stench of the miasma must be experienced to be conceived." In water taken from this spot Mr. Daniel found sulphuretted hydrogen. In some of the specimens there were 6.7 to 11 cubic inches of it in a gallon.

18. From the same narrative, it appears, that sickness attacked the vessel twenty-seven days before their entrance into the river Nun. In removing a part of the cargo, it was discovered that the cause of a "disagreeable vapour, from which they had long suffered, was, that the bags containing the cocoa had rolled, and the cocoa had fallen into the salt bilge water and there become putrid."

19. The following account is extracted from Dr. Barrington's paper. The *Hornet* had been "salted," and was consequently very damp. When she was "broken out" at New York, after her return in 1828, great quantities of mud, and other filth were taken from her hold; and in her timbers and lower works was discovered a considerable collection of chips and shavings in a putrid state. The bilge water, and smell from the hold in this vessel were exceedingly unpleasant. On board this ship, yellow fever made its appearance whilst off Sacrificios, Mexico. The *Peacock*, which suffered also, was in much the same condition. The temperature averaged 84° F. This writer states, that "by experiments made on shipboard, 17 grains of chloride of lime decomposed all the sulphuretted hydrogen in half a pint of bilge water." (*Am. Journ. Med. Sci.* Aug. 1833, p. 307, *et seq.*)

20. New Orleans "is built on a soft alluvial soil, but a few feet above the water in the wells, the dampness is consequently very great; the streets are filthy." The attack of "Epidemic Yellow Fever of the autumn of 1833" is described by Dr. E. H. Barton. August—rain 8.17 inches; average thermometer 79.97 rising to 90° F., at midnight often 81°—84°.

the streets arose a very offensive odour." The streets were filthy and exhaled a peculiar offensive odour after rains. This writer quotes the tables of Philadelphia, and the authority of Sir G. Blane and M. Arejula, to prove that the fever does not occur at a lower temperature than 79°—82° F. (*Am. Journ. Med. Sci.* Nov. 1834.)

21. On the north side of Mobile, "the land is wet and swampy, consisting of a soft black mud, apparently without any solid foundation." "Persons residing there throughout the year, will be liable to the different grades of bilious or endemic fever of either the intermitting, remitting, or continued type." The well water is warm and *brackish*. The coast bordering the bay is considered unhealthy—"the sea-breeze blows over a quantity of decaying drift wood, and other perishable matters." Spring Hill being entirely free from stagnant water is healthy." Dr. Heustis, from whom the above facts are taken, remarks "that a range of temperature from 70° to 80° F. is necessary for the production of bilious endemic, or yellow fever—it should not fall below 70° at night, or 86° in the day." (*Am. J. Med. Sc.* Nov. 1836.)

22. Dr. Lucas gives an admirable account of the topography, and diseases of Montgomery county, Alabama, in the *American Journal of the Medical Sciences*, Nov. 1827, in which the same causes are pointed out as the producers of malaria, that are requisite for the evolution of sulphuretted hydrogen. Alluvial soil, vegetable decay, and high temperature are found in the most healthy parts.

Dr. Heustis introduces similar local causes to account for the autumnal remittent of Dallas county in the same state. (*Am. Journ. Med. Sci.* Feb. 1832.)

23. Charleston, South Carolina, has been visited by repeated attacks of yellow fever. One of 1827 is fully described by Prof. Dickson in the *American Journal of the Medical Sciences*, May, 1828. The city stands on a neck of land between two marshy rivers, the commercial part is built on alluvial soil; some of which is "made," having been formerly covered by creeks which intersected it in every direction. The materials used for filling up low swampy lots, are principally pine logs, oyster-shells, and rubbish of all kinds, and even scavengers' offals. The wharves are of wood filled up with those materials, and with mud drawn from the river. "You will readily infer that grounds thus *made* will be eminently fitted for generating, and giving off deleterious effluvia." The thermometer ranged from 82° to 90° in August, in the sun it reached 120°—125°—130° F., and at 2 o'clock A. M. with every door and window open, 86° F. This writer, as well as Dr. Lucas, remarks that negroes escape often in the most unhealthy seasons.

Dr. Simmons, in a report on Yellow Fever, read in 1839, remarks: "Stranger's fever requires a high temperature, ranging 85° F.—it is accompanied with moisture. In the docks (of Charleston) a good deal of mud, with decomposed vegetable, and other materials are thrown up by the tide, and at low water, the exhalations are offensive. At present the city is surrounded by marshes through which the salt water ebbs and flows." (*Am. Journ. Med. Sci.* Feb. 1840, p. 409.)

24. Augusta, Georgia, was visited by a severe endemic in 1839. A report, drawn up by a committee of physicians, attributes it to the exhalations given off from about 117,000 to 200,000 cubic feet of decaying animal and vegetable matter collected at the trash way, and reposing on the bed of the river, above the surface of which it rose. (*Am. Journ. Med. Sci.* Feb. 1840, p. 410.)

25. Dr. Hildreth, treating of the climate of Washington county, Ohio, remarks: "In 1807 the alluvial low grounds near the river, were inundated. In 1822, the water of the rivers and creeks was low, stagnant and putrid—the Ohio for two or three months resembled a long slimy lake." In 1823 the low grounds were deluged. (*Am. Journ. Med. Sci.* Feb. 1830.)

26. Batavia, the storehouse of pestilence, is thus described by Dr. Bettner. The islands in front of the harbour (used as cemeteries) obstruct the free passage of the sea-breeze, and contribute to the stillness of the water in the roads, which sometimes appears thick and partly stagnant; "imparting an unpleasant and unwholesome odour." "This atmosphere receives still further contributions from the canals of the city, and the surrounding marshes and jungles." The coast is alluvial—nights sultry and moist, range of the thermometer 90° F. (*Am. Journ. Med. Sci.* Aug. 1830, p. 380.)

27. St. Lucia is a small volcanic island, containing rich alluvial valleys, with morasses. The tropical vegetation accumulates large stores of decaying matter in the putrid swamps. Dr. Evans calls the exhalations from the marsh of Castries, deleterious; he smelt a disagreeable odour in crossing it, and was soon after taken with nausea, &c.

28. Smyrna is built on an alluvial plain, always moist. A sulphur spring exists near the town. Its commonest diseases are miasmatic fevers.

29. Mr. Darwin remarks that in certain parts of Peru, the sulphates of magnesia and soda effloresce upon the soil, and the mud of the neighbouring saline lakes is black and fetid. That the worst attacks of ague occur here, whereas in *Brazil many marshes with rank vegetation, exposed to ardent heat, are more healthy.*

30. Certain marshes, at the foot of the Ligurian Apennines, were until 1741 exposed to an occasional influx of the sea, which, coming in contact with their decaying vegetable matter, produced the most deadly miasm. In that year the sea was shut out, and although the fresh water of the marshes stagnates, they have not since thrown up any malaria.

The same is true of the basins of Motrone, and Perotto. (See a paper by Signor G. Giorgini, *Annales de Chemie*, vol. 29.)

31. The intrusion of salt water into the marshes of Caitia, near Venezuela, produces the most fatal consequences. "So that negroes escape there, to avoid the attacks of the whites, as none dare to follow." Chagres owes its insalubrity to the surrounding swamps.

All the coasts on which mangroves flourish, are dangerous. The recess of the tide exposes to the air extensive surfaces of decaying vegetable matter,

acting on the sulphates of the sea water, and throwing into the air volumes of sulphuretted hydrogen. The deadly malaria of the South Carolina rice fields is produced by letting in the sea water to the young plants, by which the weeds infesting the rich alluvial grounds are destroyed, and abundance of sulphuretted hydrogen produced.

32. The places enumerated, with numerous others, in which bilious epidemics occur, are characterized by the requisites for the generation of sulphuretted hydrogen gas. The worst fevers prevail on alluvial sea-coasts, and yellow fever seldom attacks any other places. The cases 17, 18, 19, 29, 30, 31 are sufficient to establish the present proposition, but the argument may be further fortified by the examination of certain places which have ceased to be unhealthy.

33. There is none perhaps more remarkable than the city of Calcutta, which, at first founded on a salt marsh, was deadly to Europeans. But the talents and industry of its colonists have rendered the place healthy by draining, cleaning, and paving it thoroughly. The fate of Fultah, below Calcutta, is different; from being the abode of luxury, it has relapsed into its primeval condition of a marshy jungle, where fever and pestilence prevail.

34. New York, before its marshes were filled up with the red sandstone detritus of the island, was liable to severe remittents. European writers on malaria speak to the present day of the yellow fever of that city.

Norfolk, Va., has rapidly improved in health, since the better paving of the streets.

35. Panama, once subject to the severest fevers, has become healthy by the destruction of the neighbouring forests.

36. We find also, that in those localities where one, or all the conditions necessary for the production of sulphuretted hydrogen are absent, malaria does not exist. Such is the case in Malta; the plains of Russia; the Sandwich islands; Gibraltar; the elevated plains of the Andes, and Mexico; table lands—of this kind is the western part of the state of Pennsylvania, reputed by Dr. Callaghan (*Am. Journ. Med. Sci.* Nov. 1828) to be free from all malaria; sandy deserts as those of Africa and Arabia; the pine barrens of Carolina, Georgia, Alabama, &c.

37. It would, however, be premature to state, that in every case where bilious fever has been detected, sulphuretted hydrogen also existed. The whole subject of malarious diseases is obscure. The catalogue of epidemics attributed to this cause includes a host of ailments from ague to yellow fever, typhus and plague itself. There is some mistake here; either the exciting causes vary, or the whole of these diseases are not produced by miasma. Some of these complaints are undoubtedly produced by other causes. The discoveries in physiology made by Dr. Marshall Hall, have led to an axiom in medicine, at one time hardly suspected—that *dissimilar causes may produce similar symptoms*; which doctrine may be applied to the list of miasmatic diseases with profit.

The dispute between the contagiousness and non-contagiousness, the malarious or non-malarious origin of yellow fever, shows how undecided the profession are on this subject. This disease was called an epidemic in Gibraltar, in 1828—because of its appearance in a place which presents few of the characters of malarious localities.

38. In some of the cases adduced in the enumeration of places remarkable for malaria, it is questionable whether the means of generating sulphuretted hydrogen exist. This is the case in all inland positions, where it is uncertain that sulphates are found in the waters of the place. To decide so extensive a question, much diligent research undertaken by many persons is necessary. That the gas does exist inland has been proved by several sections, but whether the sites are malarious or not, remains to be determined. One case of the inland contemporaneous existence of miasm and the deleterious gas, I have had the means of observing. At a distance of ten miles from the college, an attack of bilious fever occurred about the middle of July, in the present year, prostrating about thirty servants. It was attributed to the frequent inundation of the low grounds of the plantation, during the spring. The individuals first attacked had been exposed to the fogs of the low grounds. Being interested in the matter, I paid the place a visit; and learned from the proprietor, that it had enjoyed an immunity for several years; and that a number of ditches had been recently dug in the marshy part of the lands. It occurred to me that this fresh exposure of alluvial soil might have been the cause of the invasion of disease, and I obtained permission to test the opinion by depositing two prepared coins (4) in the ditches. In a fortnight, which was the earliest opportunity of communication with the plantation, the coins were discoloured, notwithstanding the occurrence of freshets which interfered with the action of the reagent.

A number of cases similar to the preceding, would furnish the profession with the means of successful induction, and lead to the determination of the question under consideration. The means of submitting the proposition to experiment are so simple, as to induce a belief that before long the solution will be effected.

PROPOSITION III.—*Certain agents have been supposed to give activity to the exhalations arising from marshes called malaria.*

39. There is no uniformity of opinion as to the deleterious agent. The vehicle which conveys it is, however, acknowledged by the inhabitants of the fens of Lincolnshire, the Italian, the American, and the Cingalese, to be dew. All these observers and numerous theorists, coincide in this particular. There is an instinct in man, which warns him in a similar way. In consequence of this universal belief, that dew is an active agent in the production of this series of diseases, many have regarded watery vapour itself as the noxious matter.

40. Of those who have urged this proposition, Mr. T. Hopkins has

exhibited the most address. In his paper (No. 86 of the London and Edinburgh Philosophical Journal,) he has done much, by pointing out the philosophy of the action of watery vapour on the human frame, towards establishing his position.

It has been, moreover, his fortune to follow a list of opponents, who argued more from obstinacy than on just principles; and who were content with a *word* signifying nothing. Thus we have it asserted, that if watery vapour be the cause of malaria, it should exist in the winter!—and the question is asked, whether water is a poison? It was not such *physicians* that could stand against his perfect argument—that as the atmospheric capacity for vapour decreased in high temperatures, the insensible perspiration of the human body must diminish, and at 98° F. dew point, it must cease altogether.

The argument is indisputable as a physical law. The fact is unquestionable, that such a state of the dew point may exist. But bilious fever is not produced thereby. In the frightful mortality, that attended the first efforts to circumnavigate the globe, scurvy was the cause, and not yellow fever. It is not on the sea, but the sea-coast, marshy and rank with mangroves, that it prevails. On shores which are sandy and barren, let them be ever so saturated with water, there is no malaria. The centre of a broad stream, as the Chesapeake; or of a lake, as Ontario and Erie, is healthy, whilst the shores are pestiferous. In Choco, where rain falls constantly, malaria does not exist. Mountainous countries are seldom free from vapours, but are without bilious fevers. On the contrary, unusually wet weather, attended with inundations over the face of swampy lands, keeps off marsh fever. It is well known that the miasm arises from wet ground in the act of drying, as when the alluvial beds of rivers are exposed. The fevers of Egypt occur when the Nile has subsided, and the lands are in a muddy condition.

But if the theory under notice be correct, why do the diseases occur in autumn, which is in the United States frequently a dry season? Mr. Hopkins has furnished a table in his paper, which tells well against his doctrine.

“Mean monthly hygrometrical return for the year 1832, in the Island of St. Vincent, as given in the official report.”

January,	68.°68	April,	67.°93	July,	70.°25	October,	69.°39
February,	67.°14	May,	69.°30	August,	69.°66	November,	69.°41
March,	67.°99	June,	69.°25	September,	69.°69	December,	67.°31

“The most sickly period,” says he, “extends from August to December.” But by the table the highest dew point is in July, and the numbers given for January, March, April, May and June, are so near those for October, November and December, that the difference of dew point would, by no one, be urged as the cause of yellow fever.

Let it be remembered that the attacks of fever which occur in the West Indies, with a dew point at 80° F. and upwards, take place at a certain period of the year; and yet during the preceding healthy months the dew

point has been at 60° F. and even 70° F., without any intermittent ague or remittent. Now, in the fens of England, in Holland, at Walcheren, the dew point seldom rises above 60° F., and yet those places are infested with malaria. The reduction to which the doctrine may thus be brought, is, that in the West Indies the mildest part of the year produces agues and intermittents; the spring—bilious fevers; and the summer and autumn—yellow fever. For, in the winter, the dew point reaches the malarious point of Lincolnshire and Cheshire—in the spring, that of Italy; and in the summer, that of the African coast. Which is not found to be true of any place whatsoever.

The theory is therefore untenable, but it cannot be denied that dew does exert a powerful influence in the production of malaria, although it is not the active principle.

41. Another theory, that carburetted hydrogen gas is the active agent, has been recently advocated by M. Boussingault. He detected carbon in the dew collected over the marshes of Ain, and the lagoons of Cartago in the valley of the river Cauca. After sunset he exposed watch glasses to the air of the marshes, and collected the falling dew, which he tested by pure sulphuric acid; it yielded a trace of carbonaceous matter. He found hydrogen in the same situation, and came to the conclusion that the carbon existed as carburetted hydrogen. This discovery by direct examination is worthy of all praise, and removes the reproach, from the analytic art, of being unable to detect minute adulterations in the air. But it is no more than a piece of admirable manipulation. No one who has visited a marsh has failed to witness the evolution of carburetted hydrogen: it is constantly taking place.

This gas is one of the products of the putrefactive fermentation of vegetable matters. It will, therefore, be met wherever that process is taking place. But the conditions which increase the unhealthiness of particular localities do not contribute to the increase of the gas. The most dangerous sites are on the sea-coast, and where sea water finds access to marshes. These circumstances, which augment, and even produce malaria, (29, 30, 30,) are in no way concerned in the development of carburetted hydrogen gas.

42. Numerous other doctrines have been advanced in this matter. Hypothetical germs of every shape and character imaginable, of inconsistent properties, or possessing the power of ingenious accommodation to the wants of the case, have been proposed by learned doctors. Some have endowed them with phases of good and evil. Others pass them through cycles of transformation, like the locust appearing suddenly and destroying with voracity, and disappearing without warning, and burying themselves for years in the inactive form of the chrysalis. To Lancisci we are indebted for the destruction of the theory, which attributed malaria to the action of insects. Carbonic acid is too diffusible to rest on the surface of marshes: this is true of all uncombined gases. Moscati found no difference in the proportion of carbonic acid existing in a malarious and healthy site.

PROPOSITION IV.—*The properties of malaria are fully recognised by the profession.*

43. It prevails usually in the autumnal months, corresponding to the fall of the leaf. Frost, and low temperatures destroy malaria. The summer is commonly free from it.

44. Night and morning dews appear to be the vehicle of the poison. It has always been recognised as existing with humidity in the air. The sultriness, complained of in malarious districts, is due to the action of moisture arresting the insensible perspiration of the body, and thereby destroying the natural means of reducing its temperature.

45. Malaria arises from muddy low lands, rather than extensive surfaces of water. The heat of the sun is reflected in a great degree from water, but the exposed beds of rivers and ponds absorb nearly every ray that falls upon them. Water does not transmit heat downwards, therefore the action of temperature upon the earth it covers is arrested to a great extent; and the process of vegetable decomposition, so far as heat is concerned, is impeded rather than advanced. It is therefore the sides, and shores of rivers, and the sea, that throw off malaria.

46. Elevated positions are free from the noxious body. Hence, a retreat into the upper rooms of a house has been known to secure the inmates. It exists only close to the source, and does not diffuse itself to any distance, except horizontally, or up the side of a hill with a gradual ascent. The wind when cooler than the air, by condensing the vapour over marshes, may carry it to a limited distance.

47. The rays of the sun, or in other words the higher capacity for moisture created by them, disperses malaria, by causing the moisture with which it is combined, to be diffused into the air. The direct action of light may, however, influence the destruction of this agent.

48. A grove, or other collection of trees, existing between the source of the poison and human habitations, is said to be a secure protection. They act by absorbing the watery vapour, and thereby decomposing the malaria.

49. A high wall, by hindering the poison from passing over it, is also a valuable protection.

50. Fire destroys malaria.

51. The first symptoms of malarious fevers are, dryness of the skin, diminution of urine, bilious and other congestions, and nervous prostration.

52. Cleanliness irrigation, the cultivation of swampy lands, the annual destruction by fire of marsh vegetation, and free ditching are known to diminish the sources of malaria. The cutting off of the sea, from marshes, is an invaluable preservative.

53. Chlorine, and dryness of the atmosphere destroy malaria.

PROPOSITION V.—*Sulphuretted hydrogen is the active agent, in the pro-*

duction of those forms of malarious fevers met on the sea-coast, and the diseases belonging to the same class found inland.

54. Sulphuretted hydrogen has been discovered on the most deadly coasts. It is produced in marshes where sulphates exist either in the vegetable matter, water, or soil. The destruction of the sources of the gas, by the exclusion of the sea, has annihilated the fatal malaria of some of the Italian marshes and given health to the pestiferous town of Viareggio. The inhabitants near the basins of Motrone, Perotto, Montignosso, and Tonfalo have by the same precautions rescued themselves from these diseases. The same is true of Central America. In many of the above cases, the marshes still exist, and the fresh water lying over them is occasionally let off by sluices, and folding doors, so that carburetted hydrogen is generated, but not sulphuretted hydrogen gas.

55. The form in which sulphur exists in malaria is a matter of less consequence. It most probably forms one of the components of an organic body, containing carbon, hydrogen, sulphur and water. The reasons which induce me to believe in its organic form are various. They are as follows:

(a) The property of diffusion common to gases, belongs also to sulphuretted hydrogen. It is therefore impossible, that the gas thrown out by a marsh can rest upon its surface, but must be carried at once into the surrounding atmosphere. The presence of water in the air would not destroy the diffusibility of the gas, as has been supposed in the case of carburetted hydrogen, by Dr. Faust, (No. 11, *Am. Journ. Med. Sciences*), unless a chemical union took place between them. For water, containing a gas in solution, must transmit it by exosmosis into the air, until the latter contains as much as the former. Nor would the existence of a fog destroy the diffusiveness of the gas evolved from a marsh.

(b) The quantity of gas in the air, would seldom be sufficiently large to produce dangerous effects, if it were allowed to diffuse itself as fast as it was generated.

(c) The greatest bulk of gas is given off during the heat of the day, and that period should be the most dangerous, whereas it is known not to be so. But an organic compound containing water would of necessity cease to exist if the water lost its form and was diffused by the agency of heat. (*See section 47.*)

(d) Moscati, M. Rigaud de l'Isle, and Boussingault, discovered minute flocks, in the dew collected over malarious places. The last of these experimenters concluded that the flocks were the poisonous particles, and that they were organic. Rigaud de l'Isle found that nitrate of silver afforded with the dew of the marshes of Languedoc, a precipitate which became purple. Moscati proposed the use of a veil, as a preventive against infection from malaria, by the exclusion of the flocks. These organic particles are subject to decomposition, and then yield an offensive odour. The readiness, with which they run into a state of decay, is exceedingly great.

(e) There is but one point which appears to be opposed to the doctrine of the organic nature of malaria. It is, the rapidity with which it yields its sulphuretted hydrogen to silver, so as to be almost spontaneously decomposable. The compound should, however, possess but little chemical cohesion, for it is evident, that, in its action on the human frame, the sulphuretted hydrogen is the active agent, and probably separates itself from the other components, as soon as it reaches the circulation.

56. The agents which decompose sulphuretted hydrogen are also inimical to malaria. Fire is of this number, for by means of it the gas is converted, in the open air, into sulphurous acid and water. Chlorine destroys both malaria and sulphuretted hydrogen, the latter by combining with its hydrogen and precipitating the inert element sulphur. The value of chlorine has been proved both in the American and British squadrons.

57. The existence of trees, by decomposing the organic compound, and appropriating its water, is calculated to destroy malaria.

58. Its weight, and the readiness with which water may be separated from it, preclude its rising to any altitude in the atmosphere.

59. It is produced in the autumnal months; because then, the amount of moisture, the coolness of the nights over the temperature of the days, and the fresh deposition of leaves, furnish the most abundant materials for the formation of the organic compound.

60. The poisonous effects of sulphuretted hydrogen are too well known to require comment. There is no agent, which marshes evolve, that is so destructive to life. Messrs. Thenard and Dupuytren killed birds in an atmosphere containing $\frac{1}{1386}$ part of the gas. Nysten found that it was absorbed at once by the blood. Two or three cubic inches caused immediate death when injected into a vein, the cavity of the chest, or the cellular tissue of a dog. The same authority, with Lebküchner, and Chaussier found that it was absorbed through the healthy skin, and produced dangerous effects. The gas is a narcotic poison, prostrating the nervous system, and destroying muscular energy. In small quantities it produces colic, and internal congestions.

61. Sulphuretted hydrogen is thrown off from the healthy skin, along with the insensible perspiration. This may be tested by wearing a prepared coin. Negroes throw off a larger quantity, than white persons.

To arrest this discharge, or introduce into the system a quantity of the same deleterious gas, must lead to disease. When miasm is inhaled, the latter condition is produced.

Watery vapour saturating a high temperature, by putting a stop to insensible perspiration does not arrest the discharge of sulphuretted hydrogen necessarily. Moreover, the kidneys are known to act vicariously for the skin, as far as the discharge of water is concerned.

But the presence of sulphuretted hydrogen in the system, cannot be obviated by any vicarious action; for it does not form an ingredient of the blood;

but is an excrement thrown out by the skin, after having been elaborated by it on the spot, and without ever entering the circulation. It must therefore produce a series of morbid results, before it escapes from the body, which are, in our theory, the symptoms of the diseases known as bilious, yellow, and jungle fever, or their milder forms.

Liebig states, that sulphuretted hydrogen produces immediate decomposition of the blood.

62. It may be a confirmation of the present theory with some persons, to know, that the inhabitants of Italy have long attributed malaria to sulphurous exhalations.

63. Persons who have been long resident in swampy regions, acquire the habit of resisting the action of malaria. But they are without confirmed health. Negroes are less subject to disease from malaria, than white persons, and especially strangers. From the amount of sulphuretted hydrogen that negroes exhale, it appears to me, that the exemption the natives of marshes finally acquire may be due to the establishment of an increased action by the skin, so that the poison is thrown out almost as rapidly as it is inhaled. Toxicologists give us instances of the consumption of ounces of opium and other narcotics, without fatal effects, by persons who have habituated themselves gradually to the use of the poison.

64. The two most efficient remedies in cases of bilious fever, contain chlorine. The nitro-muriatic acid bath owes all its activity to the absorption of chlorine by the skin. Calomel is a chloride of mercury, and is absorbed with the circulation, for it has been discovered in the blood by Schubarth and others.

Sulphuretted hydrogen is absorbed into the circulation, according to the evidence of Nysten, Chaussier, &c.

The existence of these two bodies in the blood cannot take place without a decomposition of sulphuretted hydrogen, the chlorine appropriating the hydrogen, and throwing down inert sulphur. This reaction is not conjectural, for in a case of poisoning related by Wibmer, where chlorine had been inhaled by a young man with the most serious results, the breathing of a little sulphuretted hydrogen produced a rapid recovery. Nor was the recovery due to any action on the nervous system, for ammonia, which had been given before the sulphuretted hydrogen, did no good whatever.

The use of these remedies in malarious diseases is, therefore, a powerful argument in favour of the present doctrine.

The means discovered for the detection of sulphuretted hydrogen, places this important question in the hands of the profession—little skill or time is required to test the existence of the gas, during an endemic. By recording observations, made with so much ease, in the medical journals, the accuracy of the present doctrine will be proved or disproved. All that is demanded, on the part of the writer, is an unprejudiced examination, by

experiment, of the question. It is not expected that other theories will be hastily discarded, but the judgment of the profession is confidently appealed to in the final decision of the point. With one practical remark I shall conclude this paper:—Sulphuretted hydrogen is not given off constantly by the same marsh; its quantity is seldom sufficiently great to blacken silver; the discoloration reaches a brownish golden colour, and seldom advances beyond it; this may be due to the presence of other substances besides sulphur, in the compound which acts upon silver.

[We append, at the request of the author, the following letter which he has addressed us.—*Editor*.]

DOCT. HAYS.

Dear Sir:—Unfortunately I was from home when your favour arrived, or it would have been answered at an earlier period. The instance of Boston,* which you adduce in opposition to my views, is new to me, but your remarks have directed my attention to a cause of discrepancy which may sometimes occur. The extensive bog lands of Ireland are free from malaria, whereas the fens of Lincolnshire, situated in a similar climate, are surcharged with it. In the former case, the absence of poisonous exhalations is probably due to the presence of *iron* in the subsoil.

The iron may be in any form whatever, but if its electro-negative ingredient contain oxygen, it will be decomposed by the same force which overcomes the affinity of that substance in the sulphuric acid of the saline matters. This force has been spoken of hitherto, as due to the affinity of *carbon* for oxygen, but from the recent researches of Dr. Liebig it appears to be much more probable that the *hydrogen* of organic matter is the active body. The salt of iron suffering decomposition, there will be produced some new compound differing with the acid. If carbonate of iron be present and its oxygen be appropriated by the hydrogen of decaying matter, a carburet or plumbago will be formed. If a sulphate of iron be deoxidized the sulphuret results.

But the case which is immediately before us is:—where a sulphate of lime, magnesia, &c. is decomposed, and iron is likewise liberated from one of its compounds. Sulphuretted hydrogen is not in this instance formed *at all*, because the *free iron* exerts a more powerful affinity for sulphur than hydrogen does, and the insoluble sulphuret of the metal results instead of a gas. A marsh in which this action takes place will therefore be free from malaria, like the Irish bogs, unless other agents exist in the production of the poison than those contemplated in my paper.

Iron is not the only substance that may bring about this result, for zinc and many other metals unite with sulphur with great readiness. It is, however, the most frequent and important substance which exists in bogs or marshes. The amount will influence the result, for there may be too small

* [Boston has very extensive marshes in its immediate vicinity, yet intermittent fever is unknown there.—*Ed*.]

a quantity of iron present in some instances to combine with all the nascent sulphur. It is supposed by Liebig that the pyrites and zinc blende of coal owe their origin to the changes we have been considering.

I am glad that your letter has induced me to consider the negative of my proposition, that sulphuretted hydrogen exists in stagnant waters, because, the foregoing remarks may assist in pointing out the cause of the healthiness of some marshy lands, and also turn the attention of physicians to a means of remedying the production of sulphuretted hydrogen, in the streets of cities, &c., by freely distributing powdered iron ore as a preventive. Should it answer, the smallness of the expense, and the absence of smell, would constitute it a desirable substitute for the chloride of lime. The hæmatite ores would probably succeed best, but experiment alone can decide this question; and should opportunity serve, I shall examine the subject at an early period.

Whether the neighbourhood of Boston owes its exemption to the presence of a metal in the soil, or not, is worthy of investigation. But the quantity of water, the ingress of tides, winds, and other causes may in this instance destroy the malaria if formed. Amongst the localities enumerated, in which the influence of sea water is apparent, I beg to add that of Sheerness, England, the salt marshes of which are exceedingly insalubrious.

Allow me to remain, with the highest respect, yours truly,

D. P. GARDNER.

Prince Edward C. H., Dec. 5th, 1842.

ART. III.—*Excision of the Olecranon Process for Anchylosis of the Elbow-joint.* By GURDON BUCK, Jr., M. D., one of the Surgeons of the New York Hospital.

JOHN M'CORMICK, an ostler, of robust constitution, born in Ireland, aged 28 years, was admitted into the New York Hospital, September 27th, 1842, with ankylosis of the right elbow-joint, from an injury received more than a year before, in falling through a trap-door with great force upon the elbow. Owing to the swelling that succeeded, the nature of the injury was rendered obscure. Extensive inflammation soon followed, involving the limb above and below the joint, and going on to suppuration. At the expiration of thirteen weeks, when he was able to go about, the joint was stiff as at the time of his admission, when the limb was flexed in a position intermediate between a right angle and complete extension. No swelling or appearance of inflammation remained, and the general contour of the joint was natural, with the exception of the olecranon, which was expanded and uneven upon its surface with a bony prominence on either margin at an inch from its extremity. The head of the radius rotated with a creaking, cartilaginous

sound when the hand was pronated and supinated, which could be performed nearly to the natural degree. No flexion or extension could be effected, or if any did exist, it was so slight as to be doubtful to several who examined it. The immediate investments of the olecranon were thickened, though the skin covering it remained supple and free from adhesion. The scars of incisions made for the relief of the inflammation following the injury, were apparent over the outer condyle and olecranon; one of them situated over the latter part an inch from its extremity remained open till within six weeks of his admission, and was then scabbed over without any depression or adhesion. Pressure on the olecranon caused pain. The limb was wasted, and being of little service to the patient, he was anxious to have something done for his benefit.

During the first two weeks after his admission, attempts were made to restore the mobility of the joint by mechanical force. For this purpose an apparatus was used consisting of a half cylinder to receive the arm, and another the forearm and hand, joined at the ends by a hinge on each edge, and open behind over the elbow. The limb being secured with proper straps and pads, the motion was regulated by means of a screw, acting in the manner of the screw in Amesbury's machine for the leg. In this way great force could be applied to produce both extension and flexion. The patient complained of a good deal of pain at each application of the machine, and though the angle of the elbow seemed to be altered while in the machine, yet on taking it out no change was observable. After the last application, when the force employed exceeded that of any preceding application, a slight degree of motion was perceptible for a few days, but the violence done to the parts caused severe pain and tenderness around the olecranon, that required leeching and poultices for their relief.

After careful consideration of the case, I was led to regard the impediment to motion in the joint, as confined to the olecranon process, and dependent on adhesion of its articular surface to that of the os humeri by means of bony matter or otherwise. This process was the only part that presented any deviation from the healthy state; it was expanded, uneven and tender, and the two bony prominences on its surface, already noticed, seemed rather to confirm a suspicion that had been entertained by one of the medical gentleman that saw him after the injury, that the olecranon had been fractured without being separated. The inflammation consequent on the injury had also been concentrated about this part, and the bone itself had evidently participated in it. The head of the radius continuing moveable, rendered it probable that the anterior portion of the joint with which it communicates, remained free of adhesions. With these views, it appeared to me that if this process were removed, it would be easy to overcome any remaining impediment by moderate force, and perhaps eventually restore the mobility of the joint, or at any rate, improve the position of the limb, so as to render it much more useful than in its present condition. Though the former result

seemed quite doubtful, the latter, I thought, could be anticipated with such a degree of certainty as would justify the experiment, and would in itself be a sufficient advantage to compensate for the risk and suffering incurred. The numerous successful operations for the excision of the entire elbow-joint under much less favourable circumstances, afforded ample precedent in favour of the safety of an operation that proposed the removal of only a small portion of the joint. Having once performed excision of this joint,* I felt the more encouraged by the experience thus acquired to attempt this new operation. With the concurrence of my colleagues, therefore, I performed the following operation on the 29th October, nearly five weeks after his admission.

Operation. The patient lying on his left side with his back towards the operator, a tourniquet was applied over the insertion of the deltoid muscle, and the limb held with its posterior surface nearly in a horizontal position. A longitudinal incision, five inches in length, was made over the middle of the olecranon, extending three inches above and two below it, penetrating to the bone; the triceps tendon was then divided at its insertion towards either edge, care being taken to avoid cutting across the aponeurosis, which is continuous from the edges of the tendon over the muscles lying on the posterior part of the forearm, and inserted into the edges of the olecranon; these insertions of the fascia as well as the origins of the muscles beneath it were dissected up from the bone to the extent of nearly two inches, which allowed the olecranon to be exposed, when the edges of the incision were drawn asunder over the condyles. Broad curved spatulæ were used for this purpose, and with the amputating saw one-half the thickness of the bone was cut through with great facility; further progress was made in the section with Hey's saw, after which the separation was easily completed with a chisel and mallet. A deep-seated bony projection remaining towards the inner condyle was also separated with the chisel. In detaching the excised process, it was evident that adhesions were broken up, and on inspecting the articular surfaces they were found deprived of their smooth bony shell as well as of their cartilages, and presented rough uneven prominences and depressions of the spongy texture corresponding to each other, and of a deep red colour. The fragment removed was nearly an inch and a half in length, and presented no appearance that confirmed the suspicion of former fracture. No pus or synovial fluid was observed. With a moderate degree of force the elbow was now bent to less than a right angle, and the hand brought to the mouth, causing, however, severe pain, of which the patient had not complained during the previous steps of the operation.

No ligature was required. Four sutures were introduced so as to leave an opening in the middle of the wound for the discharge of the fluids, and

* Reported in New York Journal of Medicine and Surgery, No. viii. April, 1841.

between them short strips of adhesive plaster were applied, extending only half round the limb. A compress and loose bandage completed the dressing; after which the limb was placed on a hair pillow, flexed at a little less than a right angle.

A copious oozing of bloody serum continued for forty-eight hours after the operation. The patient was comfortable, and complained of no severe pain till the afternoon of the second day, when the pulse became more accelerated, and the elbow very painful, owing in part to the want of solid support, which was supplied by placing the limb on a flat splint, with a joint opposite to the elbow, allowing it to move edgewise; the bandages that secured the limb to the splint being interrupted at the elbow so as to leave the wound accessible, after which three dozen leeches were applied, followed by poultices. R. Tart. antim. gr. j., Spirit. mindereri ꝑvi., Cap. ꝑss. q. 2 hora, and Infus. sennæ comp.

Nov. 1st. The elbow is more swollen, with a moderate degree of redness and heat. Patient still complains of pain referred to the bone, though the leeching afforded relief last evening. Pulse is 120, and compressible. Temperature of the body natural. The pain increasing towards evening, two dozen leeches were applied, and again afforded relief, after which solution of sulph. morphine was given freely through the night.

2d. Was unable to sleep till toward morning, is quite free from pain; pulse is 96; temperature natural, and bowels open. There is no increase of swelling or redness; removed one of the sutures near the middle of the wound. Patient experiences great comfort since the limb was suspended last evening from the bed frame, which allows him much more freedom in moving his body as well as his limb, and facilitates the changing of the poultices. To continue the saline mixture. At evening one dozen leeches were again applied, and followed by anodynes.

3d. Has had a comfortable night, and slept considerably; is more free from pain; pulse is 92. Removed another suture. The edges of the wound remain agglutinated with an outlet in the middle, from which some purulent discharge begins to flow. At evening, six leeches were applied; after which ten grains of Dover's powder were given every three hours.

4th. Passed a good night and slept three hours consecutively; pulse is 76, and natural. The elbow looks well; removed the remaining sutures.

Subsequently an occasional application of half a dozen to a dozen leeches was necessary to relieve the pain in the bone. About the fourteenth day after the operation, the poultices were changed for simple dressings, and gentle passive motion was commenced. The suppuration was moderate, never exceeding two ounces in twenty-four hours, and was mixed with synovial fluid.

At the expiration of three weeks, patient walked about the ward with his arm in a sling, the wound being healed with the exception of an opening in the middle, from which a slight discharge continued. Efforts to re-establish

the mobility of the joint were persevered in for three weeks longer, when, owing to the severe pain attending every attempt at motion, I was obliged to desist and allow the joint to ankylose in a position most favourable for use.

When discharged, December 19th, the wound had been healed for some time, the swelling had disappeared, and the soft parts had in a great degree resumed their former suppleness; the depression left in the place of the olecranon was filling up with solid matter. Pronation and supination have not been impaired, but continued as before the operation. Patient could bring his hand to his mouth, and appeared well satisfied with the result, being persuaded that his limb would be much more useful than in its former condition. Five weeks after his discharge, patient reported himself. The arm was gradually gaining strength, the parts involved in the operation remained sound, and the depression over the olecranon was nearly obliterated by the deposition of new solid matter.

NEW YORK, January, 1843.

ART. IV.—*Electro-Magnetism in a case of Poisoning—with suggestions for its application to still-born Children, and to some forms of disease.*

By THOMAS S. PAGE, M. D., of Valparaiso.

A. T——, an Englishman, the subject of this communication, is a clerk in one of the most respectable commercial houses in Valparaiso—aged 22 years, and of robust frame. He had a slight gleet, for which he took pulverised cubebs in doses of half an ounce night and morning, and experienced from them neither good nor bad effects. On the night of the 16th of March, 1842, he went to an apothecary's shop, and asked for cubebs. Not having confidence in the lad in attendance, he requested permission to examine the label on the bottle, and read thereon Pulv. Cubeb. He then ordered an ounce divided into two parts. He returned home at midnight, when he immediately took one of the powders, placed himself in bed, and as was his custom took up a book to read; but as he states, he had not read two lines before he felt a dizziness and inclination to sleep. I accidentally discovered him the following morning about twelve o'clock, and found him with his face red and swollen; lips dark purple; mouth containing a viscid frothy saliva; tongue dry and chapped appearance in the centre, and the teeth are slightly coated with a brown sordes; veins of the forehead and temples turgid; eyes rolled upward, injected and their pupils contracted to a point; skin moderately warm and moist with clammy perspiration; feet cool; pulse very slow, moderately full, and dispersed by the least pressure; respiration very slow, short and gasping. By agitating him violently he was aroused for a moment, uttered some incoherent expression, and sunk

back into comatose sleep. These were the symptoms when I first saw him. Dr. Houstoun of the Royal Navy, now practising in this place, and Dr. Barrabino of the U. S. Navy, then attached to the U. S. schooner *Shark*, came to my assistance. We administered the sulphate of zinc as an emetic, and hot mustard and water to arouse the sensibilities of the stomach to its impression. Large draughts of this and titillation of the fauces produced vomiting; and a small quantity of the powder apparently, was brought up. The stomach pump was at hand, but as vomiting was readily provoked it was not used. The patient was made to sit on the edge of the bed with his feet in a tub of almost boiling water strongly charged with mustard. One cup was applied to each temple, and about two ounces of blood abstracted. Large sinapisms were spread over the chest and stomach and inner parts of the thighs. A very strong liniment of ammonia, cantharides and turpentine was applied to the whole length of the spinal column, until the skin became very red and inflamed. When the stomach seemed to be cleared of all traces of the poison, the mustard draught was suspended and a large quantity of olive with castor oil administered, but only a part was retained. The patient now appeared to be sinking. The surface was cold, and covered with a clammy sweat. The face was pallid with a purplish tinge; the jaw and eyelids were fallen, and the patient by powerful sternutatories, and severe blows on the face and shoulders with the open hand, could with difficulty be made to raise them. Ammonia and brandy and water were now given with light broths, and an injection composed of turpentine and ammonia. This produced a slight discharge from the bowels. The stimulating liniment already mentioned was repeated to the spine and over the surface of the body. The pulse was hardly perceptible at the wrist, if at times it was at all to be felt. The stimulants were continued. It was now 3 P. M.—There were no signs of reaction, and the features wore the aspect of death. Under these discouraging circumstances, and when every effort seemed vainly expended, we determined to dress the patient, and supported by two strong assistants, to take him from his room, continue the stimulants and light broths, and endeavour to walk him in the cool air. At first he made feeble but unsuccessful efforts to direct the movements of his legs, but at length he could not be aroused; he made no effort to stand, and sunk almost lifeless into the arms of his assistants. Broths and stimulants were poured into his mouth, but he could no longer swallow them. He was carried to his room and placed in a slightly reclining posture on his bed. His breathing was now short and hurried, his mouth widely extended and jaw fallen. Nothing seemed capable of arousing him. The exhaustion was extreme. The pulse could be felt feebly at the wrist, maintained there probably by the agitation which he had just undergone. Dr. Houstoun had left a short time previous. Dr. Barrabino remained with me. It was now 4 P. M., and worn out with fruitless efforts we desisted entirely from further exertion. At this conjuncture I thought of my electro-magnetic battery, and proposed its application to bring about reaction—for I felt we were justified, in such

desponding circumstances, to make it a matter of experiment. Cerebral congestion was urged as an objection, but admitted not to be sufficient in such a desperate case to set aside the experiment. It was immediately tried, and with the happiest results. With an assistant rapidly rotating the wheel, I applied the balls at first to each side of the neck, and ran them down behind the clavicles. The arms and body now moved convulsively, but the patient lay as unconscious as before. I now passed one ball over the region of the heart, and the other to a corresponding point on the right side. In an instant his eyes opened widely, and with a ghastly expression of countenance, his head and body were thrown convulsively toward me, and he groaned. He now sunk back into his reclining posture, and was again asleep. The balls were reapplied in the same situation, with similar results, a third and fourth time, and he cried "no more." Reaction was now positively established. The heart had received a strong impulse. The pulse was becoming rapidly developed, and the whole surface warm. We now determined to desist, and watching him attentively, allow him to remain quiet for an hour. Reaction continued satisfactorily, and when the hour had expired he could be awakened by shaking his body and calling loudly his name. There was no further occasion for the battery. He was aroused at intervals; and, at eleven o'clock in the evening, was sufficiently awake to relate where he had got the medicine the preceding night, but was still drowsy, and when not disturbed inclined to sleep. Thus he passed the night, and on the following morning was pretty well. He then told me, that he heard many things the preceding day that were said by persons about him, but that he neither felt the power to open his eyes nor move his tongue to speak; although up to 3 P. M., when powerfully agitated and spoken to, he would reply in short and sometimes broken sentences, and occasionally correctly. He further says, that the last thing he has any recollection of was my remark whilst they were attempting to walk him in the corridor, that nothing more could be done but to make the experiment. From that time all was blank to him, until, as he expressed it, "he felt as if a gun had been fired off within him, which thrilled through and shook him to the very extremities." This was the application and effect of the electro-magnetic battery.

I have said that cerebral congestion was thought at the time to make the application of the battery in such cases objectionable. The result proved the incorrectness of this opinion, and sustains this argument in favour of the practice adopted, viz. by observing the phenomena of diseases, a relation may be remarked between some of them in their earlier stages, whose terminations and consequences are quite dissimilar. Apoplexy and epilepsy furnish an example. In both there is great cerebral congestion. The former generally terminates in effusion, and paralysis is the consequence. The latter terminates in spasms, and the patient returns to his usual health. Therefore it would seem that the muscular spasms equalize the circulation and thus unload the brain; or if we might suppose epilepsy to depend upon a determi-

nation, if I may use the expression, of the nervous principle to the nervous centres, the latter are relieved by throwing it off upon the nervous extremities, occasioning thereby spasm. Viewing these vital actions as the efforts of nature to relieve organs from the effects of undue accumulations, and restore the equilibrium in the nervous and vascular systems, it appears probable that severe narcotism of the nervous centres may be diffused and shaken off by the revulsive action of the battery on the nervous branches; and that the consequent development of vital action would give an impulse to the general circulation which might relieve the cerebral congestion.

A question might arise as to the power of the medicine taken to destroy life. On this point the melancholy death of M. C——, a French gentleman, late of this place, who took the same medicine in the same quantity but a few weeks previously, affords convincing testimony. In illustration of my subject, I asked Dr. Cazentre, a French practitioner of this place, and the physician of M. C——, for an account of the circumstances attending his death and the autopsy, which he very politely communicated, as follows:—

“M. C—— was afflicted for some time with a gonorrhœa, for which without medical advice he took balsam copaiba even in large doses, but to no effect. He now was attacked with orchitis, and for the first time came to consult me. After eight days of constant attendance, the swelling which existed in the left testicle disappeared, but the blennorrhagia returned with more force. Vexed with this, he again wished to take remedies which might relieve him at once of this afflicting disease. I recommended the use of the cubebs, which taken for nine days, and gradually augmented to two drachms three times a day, had almost completely taken away this obstinate affection; when on the 13th of February, not having any of the remedy left, he sent the same recipe to the nearest apothecary's shop.* At ten o'clock at night, he retired to his bed-chamber well and cheerful. Without consulting any one, on lying down he took an half ounce of cubebs. No noise whatever was heard during the night, and at seven o'clock the following morning when they entered his bed-chamber, they found him in a state of insensibility. Half an hour after I was with him, assisted by Dr. Veillon, when we found him in the following condition.

“The body is in a state of supination. All the senses are extinguished; without hearing, speech or movement. The eyelids are fallen, and when raised the eyes look cloudy and fixed. The pupils are dilated; extremities flexible. They obey the hand which raises them, and fall like an inert body. Heat natural and equally diffused; face red. There are coloured, blackish spots on various parts of the body, but principally on the back. When the body is moved, a species of strong râle is heard in the bronchia; pulse slow, feeble and very irregular; respiration hardly perceptible. Not knowing to

* He had previously got the cubebs at another shop, but on this occasion purchased it at the same shop, where my patient subsequently procured his.

what to attribute a state so suddenly produced, and so grave, and recognising by the symptoms, the appearances of asphyxia, and thinking he might have taken too strong a dose of the medicine, Dr. Veillon and myself proceeded in consequence to extract from the stomach the cubebs that it might yet contain, and to cause reaction by the most powerful excitants. But all was in vain, and at twelve (noon) life was completely extinct. Nothing now remained but to make the autopsy, which we did the following morning at seven o'clock. All the cavities and organs were examined with the greatest care.

“*Exterior.* The face is pallid, the integuments livid, principally behind, and the corpse rigid.

“*Abdomen.* The stomach has no trace of inflammation, contains a tumbler-full of liquid in which is observed a little of the powdered cubebs mixed with some aliment which is almost digested. The intestines are sound and healthy. The bladder is full of crystalline urine. The liver, spleen and kidneys are full of black and fluid blood.

“*Thorax.* The lungs are excessively engorged with blood, and when cut into with the knife, this flows with a great abundance of froth from the bronchia. The left side of the heart is entirely empty. The right full of blood. The aorta, and all the arterial system is entirely empty. The venous system of the thorax and abdomen, as well as the pulmonary artery, the vena cava and portæ are full of black and fluid blood, which flows abundantly as soon as the vessels are divided.

“*Head.* The veins of the brain are also congested; but the congestion of this organ is not as great as what is observed in the thoracic and abdominal viscera. I repeat, that in no part was there red or coagulated blood found, but always black and fluid, and filling all that appertained to the venous system.”

Before closing this subject I would beg leave to add my impressions that electro-magnetism will not only be found a most useful agent in cases like the above, but in some forms of disease, particularly those of a highly congestive character, where oppression of the organs and the nervous system prevent reaction, and speedily destroy life. I need not occupy space in adducing cases illustrative of my meaning. In practice I think we frequently see cases, where death seems to be caused by an *obstruction* of the functions, or organic movements which support life, more than by an *exhaustion* of the organic functions, or of life itself, and in such cases, electro-magnetism might communicate an impulse which would renew those sympathetic actions between the organs, (if no positive lesion exist in any of them) upon which the continuance of life depends.

In all cases of asphyxia, electro-magnetism must be useful, and I am strongly impressed with the belief that it might be applied in very many instances to still-born children with the happiest effect. For this purpose, an instrument might be used of a very portable form; that used by me in the

case related, consists of a large horse-shoe magnet, mounted upon a stand in a vertical position, with an armature fixed upon an axis between the poles, so as to revolve in front by means of a wheel. The armature consists of two cylindrical bars of soft iron connected by a cross bar, and in the centre of the bar is an insulated ferule; as near the end of the bar as possible is fastened the breakpiece. Around each of the cylindrical bars is wound two thousand, two hundred and fifty feet of wire, covered with cotton thread to prevent the current of electricity from passing from one wire to the other; the end of one of the coils is connected with the breakpiece, and the other with the ferule. From one of the pillars which are in front of the armature, the springs are made to act on the ferule and breakpiece; from the other pillars the spring connects with the centre; the handles are fastened by the set screws in the base of the pillars. There are four set screws in the back of the upright block of wood, to set out the magnet so as to make the armature revolve as close as possible to the magnet. The shock is communicated on ordinary occasions, by grasping large brass handles which connect with the instrument by short coils of wire which are painted red. To apply it to different parts of the body, long wires covered with cotton thread and terminating in brass balls are used. Two glass cylinders enclose the wires near the balls, for the operator to hold by while administering the shock.

[Dr. J. Warrington, through whom the above communication was transmitted to us, received at the same time, two parcels; one containing the remaining half ounce of the powder, of which the other had been swallowed by the patient; and the second a portion of powder, purporting to be cubebs, purchased at the same shop from which that taken by patient had been obtained.]

At the suggestion of Prof. Wood, Dr. Warrington placed these specimens in the hands of Mr. Procter of this city, for examination, and the following article presents the results of the analysis.—EDITOR.]

ART. V.—*Analysis of a Substance represented to be Pulverized Cubebs*.
By WILLIAM PROCTER, Jr.

THE substance submitted for investigation consisted of two specimens; one labeled "sample of the powder corresponding to that which the patient took;" the other, "sample of the powder purchased by Mr. Peel whilst the patient was under the influence of the poison, who at my suggestion, went to the same shop and asked for an ounce of pulv. cubebs." They were severally enveloped in double papers and sealed; the first weighing about 100 grains, the second 200 grains; and their sensible properties accorded in all particulars.

The powder was dry, finer than cubebs ordinarily occur, and without the moist appearance usual to it. Its colour was a uniform brown, its odour less aromatic and agreeable than that of good cubebs, and its taste pungent, though accompanied by a bitterness not found in the genuine drug.

In the paper accompanying the specimens, Dr. Page does not express an opinion as to the nature of the poisonous agent associated with the cubebs. A consideration of his remarks on the symptoms produced by the powder, suggested the idea that opium mixed with cubebs might produce all the effects there detailed. The sensible properties of the substance sustained this impression, and the addition of tannic acid and a persalt of iron to its decoction, giving indications favourable to the presence of morphia and meconic acid, was considered sufficiently encouraging to cause a pursuit of the investigation with a view to the presence of opium.

1st. 100 grains of the powder was macerated in successive portions of water until exhausted by the menstruum, and the infusions united, filtered, and evaporated to the consistence of a thin syrup. To this a slight excess of chloride of calcium was added, the mixture boiled, and after cooling diluted with twice its bulk of water. The liquid after standing twenty-four hours was filtered and set aside. The precipitate collected on the filter after being washed with water and alcohol and then dried, weighed two and a half grains. This was mixed with twelve times its weight of hot water acidulated with hydrochloric acid, and agitated until dissolved. On cooling, a crystalline precipitate was deposited, having the appearance of bimeconate of lime. By again treating with hot dilute hydrochloric acid and cooling, a crystalline substance was obtained, weighing 1.25 grains, possessed of the following properties. It is very soluble in hot water, soluble in alcohol, has an acid reaction, and its solution is coloured deep red by persulphate of iron. When nitrate of silver is added to its solution, and then sufficient nitric acid to dissolve the precipitate, heating the solution causes the production of cyanide of silver. By heating it in a tube a white sublimate is obtained in brilliant scales. These tests are amply sufficient to prove its identity with *meconic acid*.

2d. The liquid remaining after the separation of the meconate of lime was evaporated to one-third of its bulk, and a slight excess of ammonia added. At the expiration of thirty-six hours, a brown crystalline precipitate was deposited, which was dissolved in dilute sulphuric acid and again precipitated. By re-dissolving in alcohol, and evaporating the solution, 2.5 grains of transparent nearly colourless crystals were obtained.

This substance crystallizes in four-sided prisms with obliquely truncated summits, has an alkaline reaction, and is coloured deep red by nitric acid. Its solution when mixed with iodic acid decomposes it, causing the separation of iodine, which then colours starch water blue, and sulphuric acid containing a little nitric acid colours it green. When saturated with hydrochloric acid it yields a salt in feathery crystals, forms a blue solution

with a per salt of iron. These reactions demonstrate beyond a doubt the existance of *morphia* in the powder.

3d. 100 grains of the powder was treated by the process of Cassola for cubebin. Ten grains of a substance answering to his description of cubebin was obtained, which by repeated washing with a solution of potassa was deprived of a quantity of resin, and the residue by solution in hot alcohol and evaporation was obtained in yellow transparent crystals. This substance, of which 2.25 grains was obtained, possessed all the properties of piperin, which Monheim has proved to exist in good cubebs to the amount of 4.5 per cent. The substance described by Cassola as cubebin is merely a mixture of pungent resin and piperin.

By distilling a portion of the powder with water, globules of *volatile oil* were obtained.

The liquid remaining after the separation of the *morphia* yielded *narcein*, *chloride of sodium*, *gum*, *extractive matter*, etc.

The alkaline solution remaining after separating the piperin by saturation with an acid yielded a resin in yellow flocks, subsequently becoming greenish brown. By treating the impure crystals of *morphia* with sulphuric ether a small quantity of *narcotine* was obtained.

The following is a summary of the substances isolated.

	In 100 parts.
Cubebin or piperin,	2.25
Morphia,	2.50
Meconic acid,	1.25
Narcotine,	} Proportions not ascertained.
Narceia,	
Volatile oil and resin,	
Extractive and gum,	
Chloride of sodium,	
Lignin,	}

As the object of this analysis is to ascertain the nature and properties of the deleterious agent associated with the cubebs, only those parts of the investigation have been given in detail, which, by proving the presence of *morphia* and *meconic acid* in the powder, render the existence of opium in it evident. That other principles, as *codeia*, *meconin*, etc. were also contained in it, there cannot be a doubt, but search for them would be as hopeless as it is useless. In conclusion, it may be observed that the quantities of *morphia* and *meconic acid* indicate the presence of about 30 per cent. of opium in the powder, equal to 75 grains in the dose taken by the patient, and doubtless sufficient to have occasioned death.

ART. VI.—*Disease of the Heart. Hypertrophy and dilatation of the Auricles and right Ventricle; hypertrophy of the left Ventricle; cartilaginous thickening of the Mitral Valve; contraction of the chordæ tendineæ connected with it; permanent patescence and regurgitation through the left auriculo-ventricular orifice; thickening of the tricuspid valve; Endo-pericarditis; Pulmonary Apoplexy. Death. Autopsy. With remarks.*
By C. W. PENNOCK, M. D., Attending Physician of the Philadelphia Hospital, Blockley.

JANUARY 23d, 1843. By the invitation of Dr. Hays, attending physician of the Philadelphia Orphan Asylum, I visited with him Eliza Hunt, one of the orphans. She is fourteen years of age, and has been in the institution ten years. Her mother died in child-bed, her father died of cholera during the prevalence of that epidemic in 1832, and she had at that time a severe attack of the disease. It was observed that her health was never robust after that attack, but no marked disease attracted attention until 1835. At that time, being eight years old, it was remarked that she became soon fatigued, respiration easily affected, and that she was incapable of continuing for a long time in active play with her companions. Her health during the last six years has been very variable; dyspnœa has been in that period always induced by exertion, or from running up stairs. She has had two severe attacks of cardiac disease; the first occurred in the year 1841 about two years ago, when she was attended by Dr. C. Morris, the physician then in attendance at the Asylum. This attack presented all the rational symptoms of pericarditis, joined with some chronic disease of the heart. The second attack was in the autumn of 1842, about four months ago, when she was under the care of Dr. Fox. This attack presented all the symptoms of endo-pericarditis, with some lesion of the mitral valve.* She recovered from these attacks, *after a sickness of a few weeks*, but, in each instance her general health was subsequently much impaired, and the cardiac symptoms seemed steadily on the increase. She has never had articular rheumatism, and her sister says that neither of their parents had ever any difficulty of breathing, asthma, or any of the symptoms attendant upon heart disease.

At present her situation is—Embonpoint, moderate; medium size; brown complexion; dark eyes and hair; countenance anxious; face suffused by a bluish tint; lips deeply purple; skin generally of bluish colour, though it is less marked than that of the face; skin rough from elevated laminæ of cuticle (Ichthyosis); face tumid; œdema of the legs, which pit upon pressure; effusion into the cellular tissue of abdominal parietes; ascites; decubitus on the back; position in bed elevated. *Thorax.* Right chest more developed

* Further details of these attacks will be given in the remarks appended to this case.

than the left, with the exception of the præcordial region. Marked prominence, or bulging, of the left chest in the region of the heart; this prominence extends from the middle of the sternum towards the left axilla, its outline is pyriform, similar to the shape of the pericardium, the bulging being, however, particularly marked between the cartilages of the left third and fifth ribs, and between the left margin of the sternum and the left nipple: percussion over the prominent portions of the chest yields a sound which is obscure in proportion to the degree of prominence; thus, over the most bulging portion, (i. e. from the third to the fifth cartilages and from the left margin of the sternum to the nipple, a space of nearly five square inches,) percussion yields a perfectly flat sound, whilst over the other prominent parts percussion produces a dull or obscure sound, gradually diminishing as we approach the left axilla. Respiration is absent where the bulging is most prominent, and very feeble over the other elevated portions of the left chest. Impulse of the heart near the apex forcible; strong thrill, (*frémissement cataire*) about one inch below the left nipple, at which point a strong rasping sound is heard during the heart's systole; and the thrill is also very strongly marked between the fourth and fifth ribs about an inch to the left of the nipple, and near the margin of the left axilla. The rasping sound entirely masks the normal sounds of the heart, and is the only sound which is heard. Over the aortic valves, two sounds are heard, both blowing, (a moderate saw sound,) but the first sound is increased in roughness when patient is excited; same character of sounds heard in the course of the right carotid artery. Saw sound over the right surface of the heart—the first sound being most roughened, and the abnormal murmur is more intense than that heard over the aortic valves. No thrill whatever over the right surface of the heart. Pulse at the wrist is regular, feeble, 120 per minute; marked difference between the force of the cardiac pulsation and that at the wrist. Percussion of the *right thoracic parietes* anteriorly, very obscure below the right clavicle in the space of an inch, resonant in the lower third, elsewhere dull; feeble respiration throughout, with crepitant ronchus in middle third near the axilla. Percussion beneath the *left scapulo-clavicular extremities* resonant, with rude respiration. Crepitus inferiorly and laterally of the left side. Sputa viscid, slightly aerated. No pulsation in the jugular veins; no humming sounds in those vessels.

The case being considered by Dr. Hays past control by remedies, the treatment consisted entirely in measures to abate the violence of the symptoms and to contribute to the comfort of the patient. The infusion of digitalis, in drachm doses every five or six hours, was directed to diminish the dropsical effusion which caused much oppression; and with the same view the patient was given for drink an infusion of juniper berries with nitrate of potash, and to procure sleep an opiate at night. She had no appetite, and was allowed for diet any light article she fancied, and she generally preferred cold cream, which was given her.

On the 25th, the oppression had increased, the urine scanty, none passed for thirty hours, and a further period of seven hours elapsed before any was

voided; bowels not opened for three days; she was ordered, in addition to the diuretics, half a drop of croton oil, which not producing any alvine dejections, the dose was repeated on the 26th at noon, and again in the evening. This produced three copious alvine evacuations during the night; the thrill (*frémissement*) observed on the 25th, and which had remained unaltered in character was then, (on the 27th,) greatly diminished.

28th. Ascites much less; respiration improved; colour of the lips less livid; cutaneous surface generally has lost the blue appearance; urinary discharge increased; the thrill (*frémissement catairè*) over the left præcordial space has entirely disappeared; pulse increased in force, and continues regular; rasping sound of the heart, near the left nipple increased; cough frequent; slight expectoration of clear fluid blood. (*Treatment, infusion of digitalis ʒj every four hours. M'Munn's elixir 15 drops at bedtime.*)

29th. Pulse the same, 120; no *frémissement*; slept well; respiration continues free; strength increased, sits upright in a chair.

30th. Slight *frémissement*; countenance less anxious; colour of the lips natural.

31st. No sleep last night; increase of œdema and ascites; the thrill or *frémissement* again strongly marked; other circumstances remain the same, with the exception that the sputa, which is scanty, is somewhat viscid and of a rust colour. (*Increase the dose of infusion of digitalis.*)

Feb. 1st. I this day again revisited the patient with Dr. Hays, and found her as follows:—(Edema of the cellular tissue much increased, hands swollen and puffy; abdomen more distended, but more resonant than on the 25th ult.; dyspnœa much augmented; patient is obliged to sit upright in bed; countenance expressive of great anxiety; skin is hot, dry, harsh, of a yellowish green hue; conjunctiva also has a yellow hue; lividity of lips diminished, still slightly purple; respiration is high, costal, 39 per minute, right chest anteriorly more expansive than the left; crepitant ronchi, with bronchial respiration heard inferiorly and laterally on both chests, but is most marked on the left. Thorax posteriorly.—Left chest most developed; the percussion is here generally resonant, the respiration rough, with sibilant and crepitant ronchi,—the latter being principally in the lower third. Right chest. Percussion yields a dull sound; respiration generally very feeble, in some portions of the chest resonance of voice increased.

Præcordial region. Prominence more marked, and extends from the cartilaginous extremities of the five upper right ribs towards the left, over a greater space than on the 25th ultimo: the dulness on percussion extending along the lower margin of the cartilage of the second right rib to the left, four inches; along that of the third, five and an half; and on that of the fourth from a correspondent point to the left axilla, being eight inches. The bulging portion between the third and fifth left cartilages and the left side sternum and nipple, is also greater than at my previous visit. The space which is dull on percussion, still coincides with that of the outline of the pericardium. Impulse of the heart feeble, more perceptible on the right than on the left of the sternum; respira-

tion is diminished in the præcordial region, and is absent from a larger space than heretofore. A marked 'frémissement' or thrill is felt over several parts of the præcordium; viz: it is very perceptible between the cartilages of the *second* and *third* left ribs; it is very slight over the intercostal muscles of the *third* and *fourth* ribs, midway between the left margin of the sternum and the nipple; it becomes very forcible in the intercostal space of the fifth and sixth left ribs, about one inch and an half below the nipple, and extends from a point one inch on the sternal side of the nipple laterally to the left axilla, being most marked in the intercostal space last mentioned, one inch to the left of the left nipple. The abnormal rasping sound near the left nipple has diminished in intensity since the first note, and occasionally, when the patient is perfectly calm, a very feeble sound, resembling the second, is heard. The *first* or *systolic sound* of the heart at the *aortic valves*, is feebly blowing, but the *second* is there very indistinct, and occasionally ceases entirely. Both sounds are *blowing* over the right ventricle, and the abnormal murmur of the *first* is most marked at the junction of the cartilage of the right fifth rib with the sternum. Pulsation in both external jugular veins, most marked in the left, but no humming sound ('*bruit de diable*') heard in either. *Pulse* at the wrist is regular, soft, easily obliterated by pressure, 117 per minute; has some cough; *expectoration* moderate, consisting of two portions, one of which is blood, the other is viscid, adherent to the spittoon, and somewhat of a rust colour. The *urine* scanty, rather high coloured. *Intelligence* is obscured, mind languid, answers questions slowly and with great difficulty. Says she feels no pain, only complaint is of feeling "tired."

2nd. Increased difficulty in respiration; is obliged to be in an elevated posture leaning forward; complexion cadaveric; lips of a dark purple hue; pulse 122, diminished in force, occasionally slightly irregular; still the only complaint of the patient is that "of being tired." Urine scanty, perfectly clear, of the colour of ale, deposits no sediment upon standing, and *does not coagulate* by the application of heat.

The dyspnœa became more and more augmented during the afternoon and evening: her mind was very sluggish, yet capable of giving correct answers when her attention was strongly directed to any point. Death took place at 11 P. M.

Autopsy eighteen hours after death.—Present: Drs. Hays, Pepper, Fox, Stewardson and Pennock.

Colour of the skin of a yellowish green hue as in life; infiltration of the cellular tissue, and distension of abdomen as previously noted.

Chest. The *right chest* upon being percussed anteriorly, yielded a clear resonant sound; percussion of the left, same as in life. Upon opening the right chest, the lungs of that cavity were found to be collapsed, being bound to the posterior part of the thorax by slight membranous adhesions, and were covered with two pints of bloody serum. The resonance of the anterior percussion being due to the vacancy existing between the surface of the effused fluid and the anterior parietes of the chest. The *lowest lobe* of

the lung was much contracted, not hardened, or hepatized, but the air vesicles were in a great measure obliterated by the compression consequent upon the effusion. The *middle lobe* generally congested; in its structure were two round masses, from one to two inches in diameter, of a dark purple colour, hardened, friable, but not granulated, (*pulmonary apoplexy*.) These purple masses were surrounded, or immediately in contact with other hardened portions, but which were of a different colour and texture, being in colour either of a reddish yellow or reddish gray, friable and *hepatized*. In the *upper lobe*, was a dark purple hardened mass of the size of an egg, surrounded by congested and hepatized portions of lung. *Left chest*.—The *lower lobe of the left lung* was much congested, containing small masses of apparently effused blood, similar to those seen in the right lobes, surrounded by the hardened, friable and granulated structure there observed. The *upper lobe* was slightly emphysematous, vesicles at the summit dilated, giving to the upper border a full, rounded form; at the summit a tubercular deposit the size of a pigeon's egg and remarkably firm. The other portions of this lobe as well as the *middle lobe*, were greatly congested; the lining membrane of the bronchial tubes were deeply injected with blood, and much bloody and spumous serosity exuded from the cut bronchial orifices. No effusion into this cavity, and no adhesions between the lungs and the ribs.

The Heart. The pericardium was greatly distended, and corresponded in outline with the obscurity upon percussion during life. In the sac was found six ounces of effused serum of a bright amber colour, perfectly clear, not containing either lymph or flocculi. No adhesions between the heart and the pericardial sac. The heart was enormously distended by engorgement of blood, and greatly enlarged; this enlargement was owing to the hypertrophy and dilatation of the right cavities of the heart, and to a similar state of the left auricle; the size of the left ventricle being nearly normal. *Circumference of the heart*, measured over the base ten and an half inches; *length* from the aortic valves to the apex $4\frac{1}{2}$ inches. On the right surface of the heart were several opaline patches slightly raised, varying in diameter from three lines to an inch; these patches are seen exclusively on the right auricle and ventricle. This surface also presented numerous rugæ, forming a peculiarly wrinkled appearance, as if the heart had been more distended at a former period. The *apex of the heart*, it was observed, corresponded with the point where the *thrill* had been heard with the most intensity. *Left ventricle*.—The walls of the left ventricle were slightly thickened near the base, where they measured six lines;* in the middle five lines, at the apex only three lines. Cavity nearly normal; numerous milky patches upon the lining membrane, being most common near the orifices. The *mitral valve* cartilaginous, greatly thickened, measuring $2\frac{1}{2}$ lines, drawn downwards into the ventricular cavity by the contraction of the *columnæ carneæ*, so that a cartilaginous ring, about one-third of an inch in diameter, was formed, barely

* Ordinary thickness at the age of patient, is $4\frac{1}{2}$ lines.

sufficient to admit the tip of the little finger, and has thus caused permanent patescence and regurgitation through this orifice. The appearance of this valve when seen from the ventricular surface is very peculiar; the *chordæ tendinæ* of the anterior fleshy column being so contracted that the valve is attached to the muscular fibre. The valve is drawn very much downward so as to be funnel-shaped, or, as was remarked by one of the gentlemen present at the examination, it "bore a striking resemblance to the nose of the sucker." The *columnæ carneæ* were much hypertrophied, and the tendons, at the points where they are in connection with the mitral valve, were one to two lines in diameter. The *auricular* portions of the mitral valve much puckered, and gathered into plaits.

The *aortic valves* cartilaginous at the base, slightly thickened on the free borders; vegetations exist near the edges, and the valves are covered with shreds of lymph. *Left auricle* dilated $3\frac{1}{2}$ by 4 inches; walls unequally thickened, measured in the thickest part two lines.

Semi-lunar valves of pulmonary artery, natural. *Right ventricle*, walls thickened, measure 4 lines at the base; ventricular cavity much dilated, 4 by 3 inches, muscular columns hypertrophied. *Tricuspid valve* thickened, cartilaginous; some of the *chordæ tendinæ* shortened; the valve would admit of slight regurgitation. The *left auricle* more dilated than either of the other cavities, its diameter being 4 inches in every direction; walls 2 lines in thickness.*

Abdomen.—Intestines distended by gas; abdomen contained half a gallon of citron coloured serum; no adhesion of the peritoneum, which is perfectly normal. *Liver*, adherent to diaphragm,—greatly enlarged, reaching as high as the upper margin of the fourth rib, and extending below the false ribs half way to the umbilicus. Its structure is hardened, firm, granulated; its acini much developed, and the cut surface presented the deep yellow of the last in strong contrast with that of the interspersed red colour. *Gall-bladder* contained a small quantity of bile, of a yellow green colour.

Kidneys, slightly lobulated, of natural size; cortical structure somewhat granulated, of a light fawn colour; *tubuli uriniferi* normal.

Spleen, size increased, firm.

The *Intestines* were not examined; externally they appeared healthy, and were buoyed upward by the effused fluid in the abdomen.

Remarks. This case presents many points of interest. A young girl without any known predisposing cause, except cholera, experienced at the age of eight years some slight difficulty of breathing, which was augmented by active exertion, and occasionally greatly increased in ascending the stairs. Two years preceding her death, whilst under the professional care of the attending physician of the Orphan Asylum, Dr. C.

* The heart has been deposited, by Dr. Hays, in the Anatomical Cabinet, the Wistar Museum, of the University of Pennsylvania.

Morris, the exacerbation of the dyspnœa was very great, attended by much præcordial pain, fever, and all the rational signs of pericarditis. In the autumn of 1842, four months before her decease, Dr. Fox, who was then in attendance upon the Institution, did me the favour to let me see her. She then complained of great dyspnœa; countenance expressive of much anxiety; some præcordial pain; position in bed elevated; prominence of the præcordial region; dulness upon percussion over a large portion of the anterior parietes of left chest, which space coincides in shape with that of the outline of the pericardium; impulse of the heart moderate; blowing sounds over the aortic valves; rough blowing or rasping sound over the apex of the heart, *but not attended by any thrill or frémissement*; pulse of moderate volume and force. From this group of symptoms, taken in connection with the preceding facts respecting her anterior history, we thought ourselves warranted in giving as a diagnosis, *Dilatation and hypertrophy of the heart, endo-pericarditis, and regurgitation through the mitral valve during the systole*. It will be observed that although the rough blowing or rasping sound was very strongly marked at the apex, thus indicating regurgitation of blood into the *left auricle* during the ventricular systole, yet this sound *was not accompanied by any thrill or frémissement*. This is a point of great importance, as it goes far to show that simple regurgitation through the mitral orifice is not sufficient, by itself, to produce the thrill which was felt over a portion of the præcordial region in the last illness. In the notes taken during this sickness, the symptom of the thrill, or *frémissement*, claimed from the first, much attention, and Doctor Hays examined the patient daily in reference to it; he observed, that *after it had existed for some time, it disappeared after the exhibition of cathartics and diuretics, and reappeared when those remedies failed to produce their specific influence*. From the preceding statement we arrive at two facts which may aid us in solving the problem as to the cause, in this case, of the cardiac thrill or frémissement. *First*, This thrill was not caused simply by the regurgitation of blood through the mitral orifice into the left auricle, for we know that with the strong rasping which accompanied the systole of the heart in the illness of 1842, it did not exist: again, this thrill does not *usually* accompany mitral regurgitation. Hence the inference, that simple regurgitation does not necessarily cause the thrill.

Second. The thrill after existing for some time ceased, and again reappeared. It ceased when the abdominal distension was diminished, when the upward pressure against the diaphragm was consequently relieved, when greater space was allowed for the movement of the lungs, when the congestion of that viscus was diminished, and when, consequently, the heart was enabled to unload itself, by greater freedom of movement, of a portion of the blood with which it had been previously engorged. That the cause of the thrill was connected with the engorged state of the lungs, and consequently of the heart, we are compelled to believe, from the fact, that when the abdominal distension from the ascites recurred, when the diaphragm was again pushed upward, the abnormal purring tremor reappeared.

It has been suggested by some of my medical friends, that the roughness of the external cardiac surface from the opaline patches upon it, and from the rugæ on its wrinkled and shrunken portions, might by friction against the pericardium have caused the tremor. In answer to this view, it may be stated that the thrill was found exclusively over the left parietes of the heart; that it did not exist over the right cardiac divisions, which were the only parts where the roughened surfaces were seen.

From the preceding facts, the cessation of the thrill, the circumstances attendant upon its re-appearance, &c., I am compelled to believe that the congestion of the left ventricle, the consequent violent systolic action of its muscular parietes and fleshy columns to force the blood onward, and the vibration resulting from the peculiar transformation of the mitral valve, must have caused the tremor in question. In support of this theory, I offer the following views:

It is a fact of every day's observation, that the state of the circulation has an important influence upon the production and modification of the abnormal cardiac murmurs. It is also a well known fact, that fluids passing through tubes or orifices "do occasion murmurs and tremors," and Dr. Hope informs us that upon forcing a liquid through a tube, "he found the sound to vary in intensity, according to the velocity with which the fluid was propelled, and to be increased by bending the tube at an angle," and that "a thrill or vibration perceptible to the hand attends the murmur, provided that the motion of the fluid be sufficiently rapid, or provided, with a less rapid current, the tube be rough or obstructed."*

Dr. C. J. B. Williams' views† are similar:—"All these murmurs," says he, "are produced by the passage of liquids through solid tubes or apertures, in the same manner as analogous sounds are produced by the passage of *air* through pipes or holes of different kinds. They are the music of *water-instruments*, as the latter are the music of wind-instruments. There are only these differences between them, that liquids being more sluggish than air, are less susceptible of the sudden motions which constitute sonorous vibration; and, not differing so much in density from the solids in which they move, liquids will have little of those reflected or echoed vibrations which increase and modify the sounds produced in air-filled tubes. Holding in mind these qualifications, we may explain the murmurs heard in the heart and arteries by referring to parallel phenomena in the ronchi, respiratory, and vocal sounds of that complete and diversified wind-instrument, the wind-pipe and its branches. Like in these there are varieties, in generating which the solids and the current have different shares; thus in the grating, sawing, and stronger droning murmurs, the vibrating resistance of the solid is chiefly concerned; and its vibrations are transmitted to the adjoining parts as well as to the current, so as to produce in them a *thrill* which may sometimes be felt by the hand. Being in the rhythm of the heart's motion, this thrill resem-

* Hope on Diseases of the Heart. American edition, p. 120, 121.

† Williams' Lectures on the Chest, American edition, p. 270.

bles that felt on the back of a purring cat, whence Laennec called it the 'frémissement cataire.'” Dr. Hope, in his third series of Experiments on the Heart's Action,* gives the following (26) observation. “I passed a needle of flexible wire through the insertion of the left auricle, and out of the opposite side, and then bent the needle into the ventricle, so as to prevent the sudden expansion and closure of the mitral valve. This greatly diminished the first sound and created a loud murmur from regurgitation, which I also felt to be attended with a strong *thrill* (frémissement cataire) at the margins of the auricular orifice.”

The preceding observations of Williams and Hope, and especially the last cited experiment, may aid us in giving the rationale of the thrill attendant upon the foregoing case. In that case, the transformation of the mitral valve of the heart was very peculiar; it was not only thickened, but it was inelastic, the chordæ tendineæ very much shortened, those of the anterior fleshy column so much so that the portion of the valve to which they were attached presented the appearance of a section of an inverted conoid, “resembling the mouth of a fish, the sucker.” Now, in the last mentioned experiment (26) of Hope, the frémissement cataire “took place when the mitral valve was forced into the ventricle so as to prevent closure of the auriculo-ventricular orifice.” We have a striking analogy between the rigid unyielding valve, drawn by the pathological state of its chordæ tendineæ and fleshy columns downwards into the ventricle, and remaining permanently open, presenting a rough irregular outline, and that of the mitral valve, in Hope's experiment, forced into the ventricle by the curved needle; the inference is therefore warranted, that the thrill in the pathological condition was also principally produced at the mitral valve.

But a question is asked; why is the thrill felt particularly at the apex of the heart, and its vicinity? The answer may be presented, that the columnæ carneæ transmit the thrill to the ventricular surface, where they are united to it, and which at the apex is thinner than elsewhere. Other elements probably entered into the formation of that thrill: during the ventricular systole, a portion of the blood was driven into the aorta, a portion entered the auricle, and a portion striking against the irregularly thickened and projecting parts of the mitral valve must have been reflected and driven back into the meshes of the columnæ carneæ, and have there caused “reverberations and eddies,” favourable to the production of vibration in the muscular structure of the ventricle with which the fleshy columns are connected.

The tricuspid valve in this case, as previously stated, was much cartilaginous and thickened. Lesions of this valve are of comparatively rare occurrence. Dr. Hope thinks that it is met with in one instance to twenty of those of the left cardiac divisions. I have rarely seen it, and should deem its occurrence as being less frequent than stated by Hope. With the data which

* Hope on the Heart. American edition, p. 58.

we now have, diagnosis of the lesions of the aortic and mitral valves can be made with much certainty, but there are difficulties attendant upon those of the tricuspid and left pulmonary, which render diagnosis of the pathological states of these valves extremely difficult. In the first place, these lesions being very rare, we seldom have the opportunity of collecting enough facts from which to deduce certain laws of the physical signs indicating the character of the lesion. Again, as regards the right auriculo-ventricular valve, inasmuch as it is the valve of safety, regurgitation must constantly occur, and it is only when the valve is in an altered condition that any abnormal murmurs are presented. Applying the same rule here, by which pathologists are guided in diagnosing lesions of the mitral valve, i. e. by the sound being conveyed by the columnæ carneæ to the ventricular parietes, we should anticipate that the abnormal sound would be conveyed by the fleshy columns to the right parietes, and especially to the septum between the cartilages of the fourth and fifth left ribs. In this case there was an abnormal blowing first sound, along the right margin of the sternum, much louder than that at the aortic valves, and which I supposed to be indicative of lesion of the tricuspid.

Still other points of interest are connected with this case; viz. the great dilatation and hypertrophy of the right cavities, particularly that of the auricle, and the dilatation of the left auricle, in connection with the hypertrophy of the walls of the left ventricle. Dr. C. J. B. Williams' remarks respecting this pathological state of the heart are peculiarly appropriate, and I therefore quote his words: "When the left auriculo-ventricular orifice is contracted, we occasionally find dilated hypertrophy of the right ventricle combined with contracted hypertrophy of the left. It has puzzled pathologists to account for this hypertrophy of the left ventricle when its task must be diminished by its receiving less blood to propel from the left auricle. It has been attempted to explain it by the left ventricle feeling the obstacle at its own auricular orifice, through the whole course of the arteries, capillaries, veins, the right side of the heart, and the pulmonary vessels; a roundabout explanation truly, and one that supposes a degree of distension of all these parts that is very rarely seen. Then Dr. Copeland urges this case as an argument for his favourite notion of an active expansion of the ventricles, which I cannot admit to be warranted by any physiological analogies. But how very simple is the true cause of this hypertrophy, if I understand it aright! Why should not the excitement of the whole heart dependent upon the distension of all its other cavities produce increased action, and eventually increased growth of the left ventricle also? Is it possible that the same fibres which encircle both ventricles can be excited in one and not in the other? No, surely; the left ventricle, naturally the strongest and most active, is thus excited by sympathy or continuity of irritation; and when its walls become increased under this influence, the cavity must be contracted from the smallness of its contents."*

* Williams' *Lectures on the Chest*, American Edition, p. 306.

The pulmonary apoplexy in connection with this state of the heart is very interesting. The rationale of its production would seem to be as follows:—Owing to the contraction of the mitral valve, the auricle, unable to empty all its blood into the left ventricle, soon becomes permanently congested. This non-transmission of blood caused the engorgement of the pulmonary veins, which extended backwards through the lungs to the right ventricle; this ventricle being hypertrophied, the blood received the impulsive force of its contraction, and not being emptied into the left ventricle, it was effused into the vesicular structure of the lungs, and thus formed the *pulmonary apoplexy*.

The expectoration was very characteristic of the state of the lungs: it consisted of two portions; one of blood, the other of viscid somewhat rust-coloured sputa, indicative of the pneumonia which was around, and consequent upon the apoplectic masses.

The triple lesion of the heart, liver, and kidneys, was observed in this case: the alteration in the cortical structure of the kidneys was in the early stage. It may be remembered that the urine was not albuminous, not changing by the application of heat.

ART. VII.—*On the use of the Liquor of Hydriodate of Arsenic and Mercury in Cutaneous and Uterine Affections.* BY ISAAC E. TAYLOR, M. D., of New York.

IN volume 16th of the *Dublin Medical Journal*, M. Donovan recommends to the profession, a new chemical combination entitled “*Liquor Hydriodatis Arsenici et Hydrargyri*.” In the last eighteen months I have prescribed this preparation in a number of cutaneous diseases, and I feel happy in being able to testify that it produces a more marked and prompt effect than the various remedies usually resorted to in those intractable varieties, Lupus, (its different forms,) Rupia, Psoriasis, Secondary Venereal, &c.

CASE I.—*Lupus exedens of the nose*.—Diretta Dridwhotten—aged 74, born in Germany, and exceedingly fleshy. When first seen had blackish incrustations around the left ala, and on the septum nasi, a portion of the ala having been removed by ulceration, and causing by its contraction the nose to be drawn to one side. A string of tubercles the size of buck shot, extended from the external canthus to the internal, and from the internal up the nose to the forehead. The lower eyelid was everted to its full extent, exposing the conjunctiva palpebralis, and producing an unpleasant deformity to look upon. Several of these tubercles were ulcerated, and had brown crusts upon them. The disease commenced twenty years ago on the left angle of the nose, which was accidentally struck by a whip, and shortly ulcerated.

This was after a time healed by a French physician, with an external application; it however, broke out again, and has since gradually progressed, till it has reached this extent. Her general health good. Various remedies have been tried in her case, but without mitigating it in the least. After the bowels were regulated, and advice given as to her diet, she was placed upon the solution, five drops three times a day, with a tablespoonful of water. She continued taking the "liquor" till October, when it was applied locally to the part, and after a short time it was perfectly healed, the dark and black incrustations were entirely removed, and a clear shining surface exposed, the unpleasant fetor and discharge ceased. The tubercles around the lower eyelid were reduced even with the skin, except a very large one at the external canthus; the lid has recovered nearly its natural position, and the conjunctiva saved from being exposed to the action of the air. After a month it commenced its work again on the nose, but was a second time arrested, and to this date has not returned, but presents a surface healed through its whole extent in the nose. The only tubercle at present remaining is the one at the external canthus of the eye that has a crust upon it.

CASE II. *Lupus exedens et lupiginosis (non-exedens).*—Mary Scatalin, aged 56, born in Germany, when she first presented herself to me, was a most disfigured, deplorable looking object, having her face covered with black incrustations, especially on the left ala nasi, and a portion of the upper lip on the right side drawn up, where the cicatrization had taken place from a former ulceration, and exposing the teeth. Many of the incrustations were covered with patches of adhesive plaster to hide the disgusting appearance they presented. A small pimple was first noticed and felt on the inside of the right upper lip, which in the course of two months ulcerated; the ulceration gradually progressed till it passed to the outside of the lip, and commenced its destructive process, extending up the lip, till it reached the ala nasi in the centre, and travelled through the nares; it also reached the top of the nose, and occupied both cheeks and forehead, leaving where it had healed cicatrices resembling a newly cicatrized burn. The disease had existed five years, and had never been entirely relieved, though much had been done and applied for her. After the bowels were regulated, which were in a deranged state, she was put upon the "liquor," five drops, three times a day, in a tablespoonful of water. She commenced taking the medicine July 28th, and in September the whole of the scabs had peeled off, and the ulceration healed. She passed some months without having any return of it, but in December there were small ulcerations commencing again, when she was placed a second time under its use, and after a few days was again restored. She had occasionally reported herself to me before the second time, and I was disposed to think she might possibly have no return of it. She has been seen lately, and still continues well, but such is the uncertainty of this singular disease that it may shortly return again.

CASE III. *Superficial Lupus*.—Cath. McS. aged 24 years, born in Ireland, single, noticed a few small red spots on the left hypogastrium which matured after some length of time, and then discharged their contents, leaving a small ulcer; this healed, while other spots were formed over the middle of the abdomen, and occasionally a few ran into each other, which surface when healed left the burn-like cicatrix of a morbidly white appearance and smooth, though having bands around the edges. When first seen, the disease on the right side was in the form of small patches of ulcerations here and there; it extended from the epigastric region, in front of the abdomen, on the left and right hypogastric, also on the hips. The disease had existed six years—patient was of a full habit, and had menstruated regularly. The same course prior to the use of the “liquor” was adopted in this case, and five drops given three times a day with a tablespoonful of water. Soon after she left for the country, June 29, 1842, and when she returned in September, nearly the whole was healed, except a small ulceration on the right side.

CASE IV. *Lupus non-exedens (Scrofulous)*.—Miss M. has had the disease five or six years, is 24 years of age—first commenced on the left arm, presenting there an appearance like cheloides, four years ago, when she first came under my notice. I had not seen her till the last fall, when she was under the charge of another gentleman, who had healed it up, but it would as soon return. The disease occupied the whole of the right cheek, chin, part of the left cheek, neck on the left side, and on the nose. She was given five drops of the “liquor” three times a day, and continued for a week, when it was desisted from, as she says, “because it had not afforded her any benefit.” The ulceration still continued increasing for two months, the different unguents had been applied, and not meeting with the same fortunate results as formerly, she was glad to make trial, she said, of any remedy now, as she was fearful that it would still progress much further, and no aid eventually be given. It was resumed a second time, and applied locally to the ulcerated parts, when in the course of two weeks she reported herself, and it was entirely healed, which it has not been for several months, her face looking as though she had had it burned severely over the whole of it.

CASE V.—*Lupus non-exedens (Forehead)*.—A. T. aged 20, had the disease one year on the forehead, when it occupied the whole front, and the upper portion of the nose. Many remedies had been tried in this case, without any good. She was ordered the same dose as the preceding cases, and in ten weeks reported herself well.

CASE VI. *Lupus of the throat (non-exedens)*.—S. C. 44 years of age. The patient several years ago swallowed a pin, and dated the commencement of the affection from this cause. The uvula and the upper part of the palatine arch were destroyed; the posterior part of the fauces ulcerated, ulcers ex-

tending some distance down the throat; tonsils gone. The patient was fleshy, and general health good—had no pains in the limbs, nor nocturnal headache, has never had any eruption on the body, and says she has never had chancre or gonorrhœa. The disease has existed near seven years. Suspicion was strongly excited in this case, but there was no positive data to suppose it was a secondary form of the venereal disease. The throat was touched during the summer of 1841 with kreasote (pure), but without benefit. Nit. argenti succeeded this, and was placed under the use of hydriod. potassæ, and with like results. Sulp. cupri was then tried in strong solution, which benefited greatly, and finally after three months' trial it was healed. In the fall of 1842, she came again under my charge, with a renewal of the disease, when she was placed under the use of the "liquor," in the same dose, and after a month's trial it was healed. I have not seen her for some months, but presume she will return should it commence anew.

CASE VII. *Syphilitic rupia*.—Emily T. aged 14 years, stated that a year ago she had chancre, and followed by bubo, of which she was cured, and two months after this the eruption made its appearance. It occupied the upper part of the lower extremities, and also the arms, and large cone-like incrustations were seated on the back. She had never menstruated; has nocturnal pain in the forehead and the extremities; her throat feels sore, though there is no irritation visible resembling the secondary form. Bowels not regular; appetite bad, and has lost much flesh. After the bowels were properly regulated, she was ordered the "liquor" in the same proportion, and continued for near three weeks, when the incrustations were desquamating, and she had improved considerably in her appearance. She was then ordered nourishing diet, with sulph. quinia as a tonic, and was perfectly cured in two weeks more.

REMARKS.—The proper treatment in this case at first would have been tonics with the iodid. hydrargyri, but I preferred trying the efficacy of the "liquor" prior to the tonic treatment, as a proof of the efficacy of the medicine in these cases, and since this it has been given in several cases, which are now under my charge.

CASE VIII. *Psoriasis diffusa*.—June 27. Mary M'Q., aged 20, a large, fleshy, florid Irish girl, arrived but a few days from Ireland, when first seen presented from head to foot a thick mass of scabs, having hardly a space free on the body except the face, and internal face of the hands. The disease had existed fifteen years. The treatment adopted was free v. s. every few days, till she had been blooded four times, and was freely purged with pill. cathart. comp. twice a week, and using alkaline washes. Under this form of treatment she improved very much, but after it had been relieved to a certain point, none of the remedies given, such as liquor potassa, hydriod. potassæ, sarsaparilla, &c. had any effect upon it, and it

seemed to remain in *statu quo*. She was then put under the "liquor hydriodatis arsenici et hydrargyri," in the same manner as the former cases, and after three weeks' trial she was entirely cured, except the front of the head. External application of tinct. lytta was then made to this, when she was relieved of all her difficulty.

REMARKS.—This patient stated, that when she had been on board the vessel two days the eruption entirely left her, and she was free from it till she came near New York, when it appeared as suddenly as it passed off.

Though it may be irrelevant to our special subject, still I would embrace this opportunity to state the singular and marked effect the sea air produces on nearly all (fully two-thirds) of the Irish and German emigrants, but more especially the former. It is seldom their catamenia returns at the natural periods from the time they leave the shores of Ireland, and the arrest continues for several months, generally, as far as my observations have gone, till the sixth or seventh month after their arrival, when it reappears. I have made trial of various treatment to benefit them, but without success; and now seldom prescribe any medicine except an ordinary black draught till this period rolls round. In some catamenia has been arrested a greater time, and in others only for three months.

I have selected these few cases from several in which cures have been obtained. Whatever doubt may exist as to the exact nature of these cases, the length of time some of them have been affected, and the benefit they have derived from the use of the remedy, must go far to urge its trial in the chronic affections of the skin. It will be noticed that the disease occurred in two of the individuals, at an unusually advanced age; for, Rayer says, "that it is most generally developed between the sixteenth and twenty-fifth year, and seldom shows itself after forty." It occurred in a third case, which is not reported, after the patient was over forty. I have not been very minute in the drawing up of the cases; the principal object being the character of the affection, the time it had affected the patients, when cured, and how the medicine agreed with them.

In the first two cases, No. 1 particularly, the medicine had been taken for six months, and is still continued occasionally, and no unpleasant symptom has shown itself, nor has the patient lost flesh. In case No. 2, ptyalism occurred one month after the medicine had been given, when it was stopped, and resumed after the patient had recovered from the salivation, which was quite free for two weeks; it also produced at first with this patient diarrhœa with some pain.

In a third case it also produced the same effect (ptyalism), though it was not so severe as the last case. In a case of cancer uteri et vaginæ it produced considerable irritation of the bowels after a few doses had been taken, and it was necessary to suspend it for a short time. It was afterwards resumed and continued, when it agreed with the patient.

M. Donovan thinks that the medicine will be tolerated, the same as tart.

antim., but I am disposed to think, judging from the effects of arsenic generally, that in long continued treatment (and especially in the cases cited), small doses will answer better than giving the large ones. The dose recommended by M. Donovan is $\frac{1}{2}$ drachm, containing $\frac{1}{16}$ th of a grain of arsenious acid, $\frac{1}{8}$ th of a grain of peroxide of mercury, and $\frac{2}{3}$ ths of a grain of iodine, in a state of hydriodic acid. The dose has been given by some of the medical gentlemen in Dublin as high as 1 drachm three times a day, without any serious effects resulting from it. I have never given over five drops, making its properties $\frac{1}{120}$ th of arsenious acid, $\frac{1}{64}$ th peroxide of mercury, and $\frac{1}{36}$ th of iodic acid.

The smallness of the dose given in these cases must be striking, and attests the proof of the power they acquire chemically combined, for it has succeeded when the different articles separately have been given without benefit.

I think sufficient data has been adduced to induce the profession to make trial of the new chemical combination.

NEW YORK, Jan. 25th, 1843.

[Mr. Donovan's formula for the "*Liquor Hydriodatis Arsenici et Hydrargyri*," is the following:—

Triturate 6.08 grains of finely levigated metallic arsenic, 15.38 grains of mercury, and 50 grains of iodine, with one drachm measure of alcohol, until the mass becomes dry, and from being deep brown has become pale red. Pour on eight ounces of distilled water; and after trituration for a few moments, transfer the whole to a flask; add half a drachm of hydriodic acid, prepared by the acidification of two grains of iodine, and boil for a few moments. Where the solution is cold, if there be any deficiency of the original eight ounces, make it up exactly to that measure with distilled water. Finally filter.

His theory of this process is the following. By the long continued trituration of arsenic, mercury, iodine and alcohol, the metals are converted into iodides, which combine. The mass by solution in water is converted into an hydriodate of arsenic and mercury. The quantities of the two metals are so adjusted, that, when converted into protoxides by decomposition of a portion of the water in which they are dissolved, there will be eight grains of protoxide of arsenic, and sixteen of protoxide of mercury. The quantity of water is such that each drachm measure of the solution will contain exactly one-eighth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury. Mr. Donovan conceives that the quantity of mercury ought to be double that of the arsenic, in order to insure a slow and moderate, yet adequate mercurial action along with the proper effect of the arsenic.

Of this liquor hydriodatis arsenici et hydrargyri, each drachm measure consists of:—

Water, one drachm.

Protoxide of arsenic, one-eighth of a grain.

Protoxide of mercury, one-fourth of a grain.

Iodine (converted into hydriodic acid) four-fifths of a grain.

The colour of this solution Mr. D. states is yellow, with a pale tinge of green: its taste is slightly styptic. It cannot be properly conjoined with tincture of opium, or with sulphate, muriate, or acetate of morphia; for all these produce immediate and copious precipitates in it. Hence if opiates are to be used during the exhibition of this arsenico-mercurial liquor they must be taken at different periods of the day. Tincture of ginger produces no bad effect.

Mr. Donovan recommends the following formula: *R.*—Liquoris Hydriodatis arsenici et hydrarg. drachmas duas; aquæ destillatæ uncias tres cum semisse; Syrupi Zingiberis semunciam. *Misce*—Divide in haustus quatuor. Sumatur unus mane nocteque.

Thus one-sixteenth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury would be taken in each dose, along with two-fifths of a grain of iodine, which being in a state of combined hydriodic acid, will be much diminished in energy of medical effect. This is according to Mr. D. the proper dose to begin the exhibition of arsenic with, but it will very soon be necessary, he says, to increase it.

The division into draughts is necessary; first to insure accuracy of the dose, so essential in the case of this active medicine; and next to prevent injury to the ingredients by the use of a metallic spoon as a measure. *Ed.*]

ART. VIII.—*Obstetrical Cases and Observations*. By ISAAC G. PORTER, M. D., of New London.

CASE I. *Uncommon force and recurrence of false labour pains, with rupture of the membranes, months previous to delivery.*—*Masked pregnancy.*—A lady thirty-five years of age, and recently married, for the first time, was unable to decide whether an obstruction of the catamenia was to be ascribed to pregnancy, or to some constitutional affection, which, a few years previously, had produced a similar cessation, for a period of seven months. Though robust in appearance, she has long suffered from dysmenorrhea, as well as divers anomalous affections, with tenderness on pressure, over various portions of the spinal column. None of the rational signs of pregnancy other than the cessation of the menses had occurred, yet as she professed (July 4th,) to have experienced motion in a slight degree, the opinion that she might be pregnant was accorded to, though with some hesitation.

July 29th. After severe concussion from a fall, two days previously, the patient was affected with violent cephalalgia, with great tenderness of cervical and dorsal vertebræ, but was relieved by venesection. Being anxious to be informed of her probable condition, an examination was instituted, which resulted in the following:—mammæ not tumid, or enlarged, areolæ not formed, glandular follicles around the nipple of the usual size, no unusual nausea or salivation, and but slight enlargement of the abdomen.

30th. Severe pains in the pelvic region for hours, like labour pains, alternating, at times, with sharp distress in the head—no secretion of vaginal mucus, but during a most severe protrusive effort, there was a gush of serum from the uterus, estimated by herself at nearly half a pint. I had left the patient for a time, but was immediately summoned by the attendants. There was not the slightest hemorrhage. The neck of the uterus was much elevated in the pelvis, soft and flaccid at its depending portions, where it was open so as to admit the point of the finger, but *rigidly* contracted at its junction with the uterus, yet not so *accurately* as to have prevented the escape of waters. The pains continued for hours, threatening from their violence immediate abortion, yet, as their effects on the os uteri were nugatory, they were checked by a large opiate injection.

31st. After a quiet night, the pains have returned with violence, and another small discharge of serum has occurred. The patient is greatly exhausted by the continuance of her sufferings and the violence of her exertions, and a serious question now arises, as to the nature of the case. Does the discharge of serum show a rupture of membranes, containing a fœtus, or is the case one of hydatids? On either supposition, the pains having partially subsided, the use of ergot seemed justified, if not demanded.—Two scruples were accordingly administered in infusion, one fourth part every ten minutes. A few strong protrusive efforts followed, but within an hour after the last dose they had given place to nearly perfect ease and quietness. During a few succeeding days, much tenderness of the abdomen followed, for which she was bled, and took calomel and opium. This, however, which was persistent in a greater or less degree, during the succeeding three months, was characteristic of neuralgia—the sensibility on slight pressure being equal to that in severe peritonitis, yet more tolerant of greater force.

August. Avoiding unnecessary details respecting the recurrence of symptoms, and the treatment, it is sufficient to say that during this month, irritation, in some form, was constantly present. False labour pains, for six hours consecutively, (unless checked by an opiate injection) and often as severe as in the last stage of parturition, returned on five or six different occasions. At other times, there was vomiting of vast quantities of bile, with great prostration—cold perspirations, with faintness and one or more slight discharges of serum from the uterus while vomiting, with numbness in the lower extremities, incapacitating for motion. Anodynes, especially opium, would have been more frequently resorted to, were it not that, through idiosyncrasy, its secondary operations were extremely distressing.

Sept. 8th. A slight discharge of whey-like fluid has escaped from the breasts, which are slightly enlarged. The motion (fœtal?) which the patient first discovered, July 4th, she professes still occasionally to experience, but recently it has been exceedingly slight. This motion, the writer has never been able to perceive, and as the occasional discharge of "waters," connected with the absence of most of the rational signs of pregnancy, seemed to indicate hydatids, or some other uterine disease, less was thought of this symptom than its importance demanded. It was not unnatural to suppose, that in an individual with her peculiar nervous susceptibilities, though possessing great candour and judgment, it might have resulted from the action of intestinal gases, or have been a mere phantasy of the imagination. For the same reason, among others, auscultation and trial by kiestene, were not resorted to. Another circumstance calculated to obscure the diagnosis was the previous occurrence of retention of the menses, alluded to above, of seven months duration, which ultimately yielded after a long course of severe "bearing down" pains.

Oct. 30th. A violent return of the false labour pains, with a small discharge of serum. The patient remarks, that although she has occasional pains in the intervals, yet she is sure to have a severe attack at the close of every month, the previous menstrual period; and my notes bear testimony to the same periodicity. A predisposition to abortion in females at what, in the unimpregnated state, would have been a recurrence of the menses, has been observed, particularly by Rigby, to be remarkably strong, and more especially is it true if the individual, as in this case, have previously suffered from dysmenorrhea.

Nov. 10th. Was summoned in the night, to visit patient in a severe paroxysm, resembling, as the attendants thought, more closely than heretofore, true labour pains; and as nine months had elapsed, according to her estimate, since she had reason to suppose she might be *enceinte*, the hopes of the parties were unusually raised. These pains, however, continued about four hours, and ceased as before. The secretion of vaginal mucus was large, as it had been on another similar occasion, and, as I entered the room, the patient was suffering from a severe *rigor*, and having almost invariably found this in connection with some dilatation of the os tincæ, some progress in labour or the development of some new feature, was confidently anticipated, but in vain.

A careful examination was once more instituted, into the nature of the symptoms, and a consultation obtained for the second time, with one of much obstetrical experience, whose opinions had hitherto coincided with my own. The uterus was more elevated in the pelvis than on any previous occasion, but we were able to ascertain that the cervix was entirely undeveloped and full half an inch long, soft, flaccid and open inferiorly, so as to admit the point of the finger, as it had ever been found at every previous examination, but closed at its junction with the uterus, so firmly as to feel like cartilage. A foreign body is perceptible within the uterus, not only by a bulging around

its neck, but by placing the hand on the walls of the abdomen. Its shape, however, is very unlike the impregnated uterus, the tumour being long and narrow, and reaching far above the umbilicus, which *was not protuberant*; the abdomen, also, was softer than in pregnancy.—Mammæ somewhat enlarged, no arcolæ, and but *one* of the follicular glands increased above the ordinary size. Neither of us were so fortunate as to discover motion. On the succeeding morning, however, it was perceived by the writer, and communicated to the physician who was in consultation.

17th. While the writer was absent from town, the gentleman just referred to was requested to visit the patient, who was suffering much as on previous occasions. It soon became evident, however, that the pains were more effective, and that she was in labour. After it had continued for some hours with great prostration and faintness, ergot was given in repeated doses, with the effect of producing the expulsion of a fœtus of full size, but dead, and exhibiting marks of incipient decomposition. The patient, however, declares that motion was as perceptible twelve hours previous to its birth, as it had ever been. Does not this show, (in connection with other similar instances which might be cited,) how little reliance is to be placed upon the testimony of the female in respect to fœtal movements, as proving the existence of pregnancy or the actual life of the child, during parturition? If perceived by the hand of the accoucheur they are, it is true, less fallible than any other symptoms, and in the present instance, had an important influence in preventing the birth of the child taking us by surprise.

The present case, it is conceived, has several points of interest:—1st. The force and recurrence of the false labour pains. That the paroxysms were of that nature, is evident from their general resemblance to such as are genuine as well as from the physiological explanation of which they are susceptible. By a powerful contraction of the circular fibres of the uterus, while the longitudinal remained quiescent, its shape was altered, being elongated in one direction and diminished in the other, and this contraction extended so powerfully quite down to the cervix as to form a barrier to the admission of the finger. Various anodynes and narcotics other than opium were given to allay morbid irritability and abnormal action, but with little permanent advantage. Judging from this case, the ergot also has little power to convert the “simple contraction,” or that of one set of fibres, of the uterus into the “compound.” If as was probable there was an early discharge of “waters,” this irregular contraction of the circular fibres, so often repeated, may have resulted in part from the body of the child coming in contact with the interior of the uterus.

2d. A second interesting feature, and one which especially obscured the existence of pregnancy, consists in the rupture of the membranes so long prior to the death of the child. That such was the origin of the “waters” discharged, is probable from the circumstance that no other source was manifested either at the birth of the child or anteriorly, or subsequently, such as hydatids or dropsy of the uterine. No one will deny that pregnant women,

occasionally have a discharge of a bland fluid from the vagina, somewhat in the form of a leucorrhœa, or in other cases in much greater abundance, amounting sometimes to more than a pint daily, and that for weeks previous to labour, when the membranes are found apparently unbroken. This proceeds, according to Dr. Davis, from a "dropsy of the chorion." But in these cases the escape is gradual, and not in a gush during a single protrusive pain. The question, however, may arise how shall we account for the *repeated* discharges, if the integrity of the membranes had been destroyed? The cervix of the uterus, it will be remembered, was never dilated; and although the tenacious mucus, which, with the decidua, closes the entrance, may have been by violent contractions forced aside, yet from the nature of the mucous membrane it is quite supposable that another barrier to the escape of waters might speedily be formed. And when the source of the amniotic fluid is taken into consideration, it being "a secretion from the inner surface of the amnion and supplied by numerous colourless vessels, which ramify on that membrane," (Ramsbotham,) there will be no difficulty in accounting for a new supply. A collateral proof of some weight, is the fact that at the accouchement there was not, within the knowledge of physician or patient, the slightest discharge of water. This subject is the more important because the opinion generally prevails, that with the discharge of the "waters," abortion necessarily follows within a few hours or days. Churchill (*Diseases of Pregnancy and Child-bed*) may be named as one among the very few authors who recognise the possibility of a completion of the ordinary term of utero-gestation, the membranes having been ruptured in the early months of pregnancy. We may also refer to a note in Gooch's *Midwifery*, by the editor, p. 94, where is recorded in few words, a parallel case. "A case has fallen within my knowledge, in which the membranes ruptured and the liquor amnii was discharged, at the fifth month of pregnancy; trifling portions of this fluid continued to be discharged at frequent intervals during ten subsequent weeks, at the end of which time a living child was born, which survived about ten days. There was no appearance of liquor amnii at the time of the delivery."

3d. The failure of pregnancy, in this case, to announce itself by many of the ordinary and more important signs, serves to confirm many of the positions maintained in an interesting article on this subject, by Prof. Beck, in the last number of this Journal, and to inculcate caution in giving a decided opinion. Not to recapitulate, or descend to minor points, it is sufficient to allude to the absence of the areolæ, and enlargement of the accompanying sabaceous glands, also, to the circumstance that the neck of the uterus remained entirely undeveloped, certainly within one week of parturition.

It will be remembered that the patient in this case has been long affected with spinal neuralgia. How far its anomalies are to be traced to that source, I am unable to determine. Nothing, however, would so soon, and for so long a time, relieve the alternate pains in the pelvic region, as a blister to the sacrum, or when the distress was elsewhere to a corresponding portion of the spinal column.

CASE II. *Division of umbilical cord previous to delivery.*—Is it ever necessary or proper to divide the umbilical cord, where it is found encircling the child's neck, previous to the delivery of the body? Collins, in his recent work on midwifery, thus describes the danger of suffering it to occupy the position alluded to. If this be not attended to, (its removal,) the child may be injured where the funis presses strongly on the neck, both by the cord acting as a ligature, and having its circulation checked; also, in consequence of the funis being thus shortened, the placenta might be dragged away, causing serious injury to the mother, either by inducing hemorrhage or possibly inverting the uterus."

Feb. 1841. A lady, who, as she supposed, had considerably surpassed the ordinary period of utero-gestation, was ultimately delivered after a rapid labour. Nothing unusual occurred, until the last stage, when it was discovered, after the birth of the head, that the funis was encircling the neck so closely that there was danger, not only of its own circulation being arrested, but all communication between the child's lungs and the external air being cut off. Strong efforts were made to disengage the funis by passing it over the head, and failing in this, in an opposite direction, over the shoulders; but owing either to the size of the child, which was large, the relative shortness of the cord, or its circumvolutions around the body or limbs of the child, I was unable by traction to gain an inch; indeed it was with great difficulty that a finger could be insinuated. The pains being rapid and forcible, the funis was severed with the scissors, and without applying two ligatures, as would have been proper had there been time. The uterus was acting at the moment, and immediately forced along the body of the child, when the foetal section of the cord was seized and a ligature applied. The child was safe, and the mother probably escaped one of those accidents mentioned in the extract from Collins, cited above. The only danger in such a procedure respects, of course, the child, that it may die from hemorrhage; but this will appear trifling, when we recollect that some physicians even now deny the necessity of a ligature after birth, and in some of the wards in French hospitals none are used. But this is doubtless an error, since hemorrhage may occur, though not visible at the time of the incision. It is important to wait until the last pain, as near as can be ascertained, before dividing the cord, especially if two ligatures have not been used.

This mode of procedure was the suggestion of the moment, and it is granted is only an exception to the general rule, for although the funis encircle the neck, and cannot be drawn down sufficiently to slip over the head, yet, as has been ascertained by extensive observation, the cord, when thus forming a coil, is usually *longer* than natural, and sufficient extent will *ordinarily* remain, so that the delivery shall not be incommoded.

CASE III. *Anterior obliquity of uterus impeding parturition.* Dec. 1842.—Mrs. M., of delicate health, forty-three years of age, and pregnant

with her first child, had suffered from moderately active pains for twelve hours previous to my arrival; and for as long after they were unsatisfactory and inefficient, commencing with violence but ceasing almost immediately, or merging into a state of continued distress. The head was in the mean time pressing through the lower strait covered with the uterus, which latter was, as far as could be ascertained, without os tincæ—nothing being apparent but a hard globular tumour, with no inequalities within reach. After repeated efforts, and by directing the force between the perineum and the tumour far up towards the sacrum, a *fovea* or pit could be distinguished, which was the unexpanded os uteri. By gently insinuating the point of the finger it gradually yielded, and efforts were made to draw it towards the pubis, retaining the amount gained by continued traction, though less in degree during the intervals of pain; more propulsive efforts soon followed; the anterior obliquity was gradually restored; the axes of the uterus and of the pelvis were made coincident, and the labour was happily terminated. The uterus seemed flaccid and easily dilatable, and as the pains had been sufficiently strong to force the child low into the pelvis, it would appear either that there was an unnatural closure of the os, owing possibly to some inflammatory process set up during pregnancy, her infirm health favouring the supposition; or that the anterior obliquity (rare in a first child) was so excessive, that the pains acting at a great mechanical disadvantage, were necessarily inefficient. The case is published, not for its novelty, but rather to put on record another of those cases like the above, in which first appearances being fallacious may lead to false practice. Under such erroneous impressions it is that the uterus has been divided by an incision, for the escape of the child, when a subsequent labour has been successfully terminated *per vias naturales*.

CASE IV. *Dystocia from malformation of fœtus.*—The following case of dystocia recently occurred in the practice of Dr. N. S. Perkin, of this city, and its details are reported as furnished by him. A delicate woman, pregnant with the third child, had suffered in an extraordinary degree from local pains, vomiting, faintness and loss of sleep; and residing five miles distant, had sent for ordinary medical advice. The gentleman, above referred to, found her on his arrival, excessively prostrate, with cold perspiration and great faintness. Seeing her nearly exhausted, and judging from slight uterine pains, that labour might have commenced, although she supposed herself to be at the eighth month, he found, on examination, the os tincæ dilated and very flaccid. He immediately ruptured the membranes, thus discharging a large quantity of green water, and labour followed speedily and naturally until its close. The head presented and was delivered, and so with the body as far as the hips; but then, notwithstanding the strongest pains and considerable traction of the body of the child, which was then alive, not the least advancement was made. Attempting to examine the cause

of the delay, the knees were found presenting and soon were forced through the external parts. Still the pelvis of the child was locked in that of its mother, and so continued for nearly two hours; the patient being greatly alarmed and nearly exhausted. Strong efforts were made at times to disengage the child, and at length with the exertion of all the physician's force, it was accomplished. Not expecting an accouchement, his instruments were not with him, and hoping that every moment would be the last of his patient's sufferings, he had not sent for them. The cause of obstruction was found to be an immense tumour on the posterior aspect of the sacrum, in size equal to the head of a child four or five years of age. Its circumference at its junction with the body was eighteen inches. The anus presented on the anterior aspect of the child, and occupied a position three or four inches above the bottom of the tumour. The intimate structure of this tumour, we regret was not very accurately determined. It was examined with some care immediately after it was delivered, but was not dissected; and at the next visit of the physician had been removed from the house. From its external aspect and its consistence, it being for the most part soft, yet in isolated portions hard and in other parts fluctuating, it is supposed to have been fungus hematodes of the nates of the child, conjoined with, possibly, *spinæ bifidæ*. In this Journal for January, 1841, p. 275, will be found a case by Prof. Drake, somewhat similar in its general features, though exhibiting less extensive marks of congenital disease.

ART. IX. *Communication of Pulmonary Air Vesicles by a direct route with the Pulmonary Veins.* By W. E. HORNER, M. D., Prof. of Anatomy in the University of Pennsylvania.

THE following experiments go to determine this point.

EXP. I. In July last I lost a patient, James Roomy, ætat. 19, at the Philadelphia Hospital, who had been treated by me for calculus of the bladder, by lithotripsy. On the examination of him after death finding the lungs in a state of perfect health, they were removed and taken to the University. I then fixed a pipe into the trachea and permitted a column of water to pass gently. The lungs filled up very completely, the air cells became distended with water, and somewhat to my surprise at the time, (for I had no such result in view, but merely to wash the lungs well for ulterior anatomical purposes,) the left side of the heart filled and the aorta began to discharge water from its cut branches very freely, in fact in a strong jet when compression was made so as to reduce the size of the stream in its exit.

No stream made its appearance from the right side of the heart, the water

not showing any current in that direction, not even in drops, nor filling the pulmonary artery.

These observations were repeated at several trials of a separate kind on the same pair of lungs on the same occasion, and were renewed the next day. The result was announced at the time to Dr. Samuel Jackson, my colleague, as we were in consultation on a patient.

EXP. II. In December last, a young athletic man lost both his legs from a railroad accident, followed by amputation. Having got his lungs with the heart attached, I renewed my experiments on the free communication of the air vesicles of the lungs with the pulmonary veins, and found the same results from a column of water gently let into the trachea—the left side of the heart readily filled, and the branches of the aorta spouted out water. The pulmonary artery and the right side of the heart did not fill, but a little water after a while returned by them, not however in any approximation to the quantity discharged by the aorta.

EXP. III. *Feb. 16th.* A Malay about thirty years of age, athletic and well formed, belonging to an East Indiaman, committed suicide about a fortnight ago. He stabbed himself in the abdomen so as to sever the colon and duodenum, and also opened the external carotid artery; by these several wounds he was well drained of blood. He was injected so as to retard putrefaction, the weather also has been highly favourable from its coldness, to the same end. The lungs to-day were in a state of perfect soundness, and of elegant normal texture and colour, so that I exhibited to the anatomical class the best specimen of them in a state of exact physical soundness with freedom from congestion of blood, that I have met with in thirty years of anatomical pursuits. In the evening I injected the left lung according to my plan, with tallow, having in view the connection of the air vesicles with one another.

On the 17th, I applied as in the two preceding experiments a column of water upon the lung of the right side. In a very little time I found the water returning by the pulmonary veins *pleno rivo*, and a very scanty show of it in the right pulmonary artery, not enough to discharge except by drops in a very slow manner. The experiment was renewed on several trials, and the results the same.

It may here be remarked that the return of the fluid by the pulmonary veins was much more rapid in the beginning than towards the end of these experiments, for when the lungs become infiltrated with the water the connection of the air vesicles and the pulmonary veins is not so free.

EXP. IV. *Sept. 1842.* On the lungs of a hog taken from a slaughter-house, the experiment done in the same way showed no communication either with pulmonary veins or arteries on the part of the air vesicles.

EXP. V. On the lungs of a sheep, resulted in failing to show also any communication with the pulmonary arteries and veins on the part of the air vesicles.

EXP. VI. On the lungs of a calf, also failed to prove the communication between the air vesicles and the pulmonary blood-vessels.

Among the venerable rites of that ancient people, the Hebrews, is a scrupulous regard to the perfect healthiness of the flesh that they eat, and also to the animal when slaughtered having the blood almost thoroughly evacuated. At the suggestion of my friend, the editor of this Journal, I obtained the lungs of animals prepared for market by one of their butchers, and the following results occurred in the lungs of the calf and sheep.

Feb. 25th. EXP. VII. On a calf. The lungs, upon the introduction of water into their air vesicles, began to return the water in a little time by the pulmonary veins and the pulmonary arteries. In keeping up the pressure of the column, it returned by a large free stream from both sets of vessels.

EXP. VIII. On a sheep. The lungs under the same regulated pressure of a column of water, returned it by the pulmonary arteries and veins also in a clear large stream.

In neither animal, however, did it return with equal freedom as in the human subject: though, in the lungs of the calf, the stream was sufficiently copious to wash back several large coagula of blood from the pulmonary artery.

The preceding experiments would go to prove the existence of a direct communication between the air vesicles and the pulmonary blood-vessels, especially the veins. A suggestion to the contrary, which may have some force, is, that the connection, as above established, is not by direct inosculation, but by infiltration: to which it may be replied, that in such case the injected fluid, by passing into the common connecting cellular substance, would constitute an intervesicular and interlobular dropsy, which would show itself by the water raising up the pleura in large vesications or bags—and by its forming large interlobular collections—also by the incapacity of the lungs to contract to the normal size in a short time, after the pressure of the water was withdrawn and the trachea left open. The lungs would at least remain for a time of a size nearly stationary on the suspension of the experiment, as in the carnification arising from the large effusions of blood into its substance in violent pneumonia. Now if prudence be observed in the experiment, none of these events occur, but the lungs collapse almost as readily as if they had been distended simply with air.

EXP. IX. On the fresh lungs of a large bullock. The residuary air of the pulmonary vesicles was, by the force of a column of water, driven from the lungs into the pulmonary blood-vessels, and the pulmonary artery was distended and inflated with the condensed air, so as to give it a tension and elasticity like that of a strongly inflated large intestine. With this state of things there was no emphysema of the lungs, which would follow inevitably without a direct communication between the air vesicles and the pulmonary vessels.

In the same lungs the current of water sent into them through the trachea, returned so freely by the pulmonary artery as to make a jet six or eight inches long, and of the size of the little finger; it also came out in a free jetting stream from the branches at the arch of the aorta. These jets could be increased, diminished or stopped without delay by the turning of a stop-cock.

EXP. X. On the lungs of a pig. I first of all inflated them by the pressure of a column of water acting on a reservoir of air. The air was found to pass readily to the heart by both pulmonary veins and arteries, but with especial freedom by the latter and distended them strongly. Having satisfied myself of this result, I then let in a column of water, which, as in the other experiments, returned freely by the pulmonary blood-vessels, being indicated by a bold stream from the pulmonary artery and aorta.

The abundance of the pulmonary capillaries, and their thinness and superficial position may be considered as additional arguments in favour of the

conclusion drawn above, of direct inosculation with the air vesicles, but of course by pores which must be exceedingly fine. The lateral pressure of a column of water upon them would, without such inosculation, have the effect of water in the bladder upon the ends of the ureters, and would prevent itself from getting into them.

The foregoing experiments may serve to elucidate some of the phenomena of respiration and of pulmonary hemorrhage.

The fact appears to be overlooked by pathologists generally, that the bright colour of the blood in hæmoptysis, and the more superficial position and greater numbers of the pulmonary capillary veins, indicate that they are the true fountains of its blood instead of the arteries:—opinions which have for many years past been taught by me, on the ground of my minute injections of the lungs.

I may also state that with these experiments of the unquestionable transmission of fluids and of air into the pulmonary vessels from the air vesicles, we can now account for what every experienced anatomist has often observed, and will in every case see, to some extent: that there is always air in the pulmonary artery, the left side of the heart, and the aorta, after death, however recent the death may have been, and also account for the mistake of the ancients that the arteries conveyed air naturally, inasmuch as they were found filled with it after death, an error which has been indefectibly commemorated in the name of these tubes.

As leisure offers I propose to go on with the experiments on the above question of continuity between the blood-vessels and the vesicles of the lungs; but hope that in the mean time it may attract the inquiries of others more competent to settle the precise mode of this continuity.

ART. X.—*Surgical Cases*. BY GEO. FOX, M. D., one of the Surgeons to Wills Hospital.

Contraction of the hand, resulting from burns—Operation by incision—Cure.

CASE I. Mr. A. C., ætat. 17 years, consulted me in Nov. 1841, on account of a deformity of the little finger of the left hand, resulting from a burn, which happened in his infancy. The finger was firmly united to the palm of the hand throughout its whole length, excepting at the tip for about the fourth of an inch; he stated that an operation had been done many years previous, which, as was evident, had completely failed.

As the deformity, though slight, was exceedingly annoying to him, and he was desirous, if possible, to be relieved, I advised the operation, which I performed on the 12th of Nov. (aided by my friend Dr. Norris) in the following manner. The hand being extended on a table, with a scalpel I made

an incision through the cicatrix, its whole length, until I was able completely to extend the finger; the hemorrhage, which was trifling, being arrested, the finger was extended and secured firmly, by means of long narrow strips of adhesive plaster, to a straight splint, well padded with carded cotton, on the back of the hand, extending above the wrist, at which point a broad band of adhesive plaster was also placed; a pledget of lint was then applied to the wound and the arm placed in a sling.

Evening. The pain following the operation has been very great; he has taken 25 drops of laudanum, which is to be repeated at bedtime.

13th. Has passed a restless night, there is some febrile action, he complains very much of pain shooting up the arm, the hand is slightly swollen, and inflamed; directed, a cathartic of senna tea, cold water dressing to hand, and a vegetable diet.

14th. Much more comfortable, no fever, the pain, inflammation and swelling of the hand much less: cold water dressing to be continued during the day, and to apply a poultice of bread and milk at bedtime.

15th. Swelling and inflammation of the hand nearly gone; he complains so much of the back of the finger and of the pain shooting up the arm, that I removed the adhesive strips from around the finger, which immediately resumed its flexed position; the wound looked well, there is some redness and soreness of the back of the finger opposite the joints; placed fresh cotton on the splint and reapplied the adhesive strips, securing the finger as before, and directed a plaster of simple cerate in place of the poultice.

19th. The pain after the dressing on the 15th was very great for some hours, since then he has suffered very little: dressings are again removed, find the wound cicatrizing rapidly; applied nit. argenti and dressed as before.

Dec. 1st. I find the wound is completely cicatrized, the finger is straight and there is some motion at the joints. The dressings have been removed, and application of nit. argenti made every second or third day since last report; directed the splint to be continued.

14th. Splint was left off yesterday, but the tendency of the *cicatrix* to contract is so great, it is reapplied and directed to be continued some weeks longer, secured by a common roller, occasionally leaving it off for one or two days.

May 20th, 1842. Upon examining Mr. C.'s hand, I found the little finger slightly flexed in consequence of the contraction of the cicatrix; but I am pleased to see he possesses considerable motion of the joints, which he thinks is daily improving, and appears well satisfied with the result. The extended position of the finger was persevered in with slight intermissions about two months after cicatrization was complete.

CASE II. David Banks, ætat. 12 years, was admitted into the Wills Hospital, June 15th, 1842, for a contraction of the middle, ring and little fingers of the right hand. It was stated, that about four months previous, when at work in a factory, he had received a severe burn of this hand, which had

never been properly dressed or attended to, and the contraction of these fingers resulted from the neglect.

The three fingers are drawn towards to the palm from the first joint of each which is free, by short, thick, strong bands, the length of which varies somewhat in the different fingers, that of the middle finger being the longest, the ring finger the next, and the little finger the shortest, which is consequently drawn most to the palm; the hand however, is comparatively useless, and will materially interfere with his prospect of obtaining a livelihood unless relieved.

21st. In the presence of my colleagues Drs. Hays, Littell and Parrish, I operated as in the preceding case, dividing the cicatrix of each finger separately, and securing the fingers with strips of adhesive plaster to a carved splint, padded with cotton, placed on the back of the hand and secured at the wrist with a broad band of adhesive plaster; the splint is so made as to enable me to dress and fix each finger separately.

Evening.—Finding my patient suffering a good deal, a teaspoonful of the solution of the sulp. morphia (gr. j. to \mathfrak{z} j.) is directed to be given at 8 o'clock, and unless easier, again at midnight.

The after treatment of this case was similar to the preceding one; the pain was not so great, the constitutional disturbance slight, and soon relieved by appropriate treatment; the dressings were renewed on the 24th, 27th and 29th of June, on the 2d, 6th and 9th of July; the little finger had cicatrized on the 6th July, the other two on the 9th; he continued in the Hospital till the 3rd of August, when he was discharged with a good hand, enjoying almost perfect motion of the fingers; he was directed to continue the splint for some months secured by a common roller, omitting it occasionally for a day or two.

Jan. 25th, 1843. Upon visiting David to ascertain the present condition of his hand, I find the *contraction of the cicatrix* of the little finger has been so great as to draw it down, till it forms nearly a right angle with the palm; the other fingers continue perfectly straight, and can be flexed and extended at will, enabling him to grasp and hold an article not very small with considerable power.

Feb. 15th. Dr. Hays informs me that he has seen the patient more recently, and finds his hand continues in the condition described.

Remarks. The result of the operation in the two preceding cases was more successful than ordinary, which I am inclined to attribute mainly to the fact of my being able by the use of strips of adhesive plaster securely to fix and retain the fingers in the extended position until cicatrization was complete; the tendency of the cicatrix to contract was in a great measure overcome by continuing the application of the splint for some time after cicatrization was complete; in Banks's case this was not done after he left the Hospital so faithfully as I had directed; in his case the subsequent contraction of the little finger is very great, while in the other two fingers there is little or none; this can hardly be accounted for by a difference in the thickness or depth of the cicatrix, as there was little or no difference perceptible; the flexor tendons

of both the little and ring fingers were exposed by the incision, and the same was also done in Mr. C.'s case.

False Aneurism of the Anterior Tibial Artery—Ligature of the Femoral Artery—Cure.

Sept. 17th, 1842.—I was requested by Dr. Robert A. Hunt, of Falsington, Bucks Co., to visit with him a patient labouring under false aneurism of the anterior tibial artery. When I reached there in the afternoon I received the following history of the case:—Isaac Cutter, ætat. 12 years, apprentice to a butcher, whilst engaged in skinning a calf, on the 11th of July last, received a wound less than an inch in extent on the inner side of the tibia, about midway between the knee and ankle, which bled considerably; his master not succeeding in arresting the hemorrhage, sent for Dr. Hunt, who dressed the wound in the ordinary manner with adhesive strips, compress and roller. The wound united by the first intention, excepting a small spot at the upper extremity of it, and the Doctor's attention was not again called to the case until some weeks subsequently, when he noticed the boy limping, as he passed his office; he immediately examined the limb, and found a large aneurismal tumour at the seat of injury extending above and below the original wound at least an inch; at the upper part, the integument covering the tumour was very thin. The weather being excessively warm, it was deemed most advisable to defer any operation; moderate pressure was made, and rest enjoined. Hemorrhage first occurred about two weeks since, and subsequently there have been two returns; upon the two first occasions, it was soon arrested by pressure made upon the part; last evening it returned with increased violence, and the Doctor was unable to control it until he compressed the femoral artery.

I find the lad with a frequent feeble pulse, from 130 to 140; hot skin; surface of body pallid; lips almost bloodless; anxious countenance, and great excitability; no return of hemorrhage since last evening. Upon removing the bandages, &c. to examine the tumour, the blood almost immediately gushed out, and it was requisite again to make pressure upon the femoral artery to arrest it; the aneurismal tumour was not so large as when the Dr. had first noticed it; at the inner side just below the point from which the hemorrhage proceeded, there was a slough (half an inch square) partially separated, the tumefaction and tenderness of the whole limb was very great, there was also a copious discharge of pus from the side of the tumour, the abscess extending up to the knee. Under these circumstances we decided to take up the femoral artery, which I at once proceeded to do, making an incision of two inches extent upon the anterior and inner part of the thigh, immediately over the artery just before it penetrates the triceps muscle, having the sartorius muscle to the inner side. After dividing the skin and separating with the handle of the scalpel the cellular tissue connecting the muscles, I came down to the fascia, which was carefully and slowly divided to the extent of an inch. The artery was now freed from its connections, and a ligature passed under it; after satisfying ourselves there was nothing

else included, it was tied, the bandages, &c. being removed from the tumour, the hemorrhage and pulsation was found to have entirely ceased. The incision was now carefully brought together with adhesive strips; a compress and bandage lightly applied. A poultice of bread and milk was then applied to the tumour, the foot and limb enveloped in carded cotton and slightly elevated. The patient had become sick and faint upon the first incision being made, so much so that the pulsation of the artery was scarcely perceptible; he however soon revived and an anodyne was then administered.

18th. Morning.—We found our patient had passed a good night; he expresses himself as feeling much better; pulse slower; countenance looks better; the natural temperature of the limb quite restored, and the parts in the neighbourhood of the tumour looking better; less purulent discharge; continue poultice, and a mild farinaceous diet with milk.

22d. Has been much more comfortable since the operation, though still complains of much soreness of both limbs; tongue nearly clean; skin pleasant; not so pallid; pulse frequent, 120; temperature of limb natural, the incision has united by the first intention excepting at the lower end, where the ligature is; upon removing the compress a small quantity of pus was discharged from this point, the aneurismal tumour is much diminished, the slough over it has separated, and it appears as if the sac itself would slough, the edges of the ulcer look healthy, suppuration from the adjacent parts still continues, though much diminished; continue a poultice to this part. He is allowed a good nutritious diet.

Oct. 3d. Much improved in every respect; skin and tongue natural; pulse 100, pleasant, free from all irritation, all inflammation, swelling and tenderness of limb gone; aneurismal sac separated on the 29th ult., since which time the wound has rapidly improved and is cicatrizing; there is now no suppuration.

8th. Ligature came away to-day, being the twenty-first since the operation.

15th. Nearly well; makes no complaint; incision healed; the lower wound nearly so. He is allowed to sit up and has a generous diet.

Feb. 1st, 1843. Heard from Isaac a few days since,—“he is perfectly well, running about as usual.”

REMARKS. It is a question whether the application of a ligature to the femoral artery, is not preferable in most cases of injury or disease of the upper portion of the anterior or posterior tibial arteries, to the ordinary method of cutting down and securing both ends of the vessel at the seat of injury. The state of the soft parts in the neighbourhood of the aneurism in the case narrated, was such as would have rendered it highly improper if not impracticable, to have secured the artery near the seat of disease. The place selected for performing the operation was that recommended by Hunter. The patient was a delicate lad, and the artery at that place appeared very superficial, more so than we found it to be; it was, however, readily secured, and not followed by any of the unpleasant consequences said to result from the application of the ligature at this point.

ART. XI.—*Observations on the Pulse and Respiration.* By JOHN M. B. HARDEN, M. D., of Liberty county, Georgia.

THE following observations on the pulse and respiration, although few and imperfect, may not be considered entirely valueless. They have been made upon my own person, in a state of health, in the three postures of lying, sitting, and standing, and while under the influence of various exciting agents; and although the data may be insufficient to allow us to estimate correctly the separate influence of each, they can still be added to that mass of well ascertained facts from which this influence may hereafter be determined, not only in a state of *health*, but of disease also.

The effect of a *change of posture* upon the *pulse* has, for some years past, attracted the attention of physicians. At a meeting of the British Association, held in Dublin, in 1835, a paper was read to the Medical Section, by Dr. M'Donnell, on what he called the "*differential pulse*," in which he asserted his claim to priority in ascertaining it in 1794,* and two or three papers containing very interesting experiments upon the subject, by Wm. Augustus Guy, have been published in the reports of Guy's Hospital, during the years 1838 and 1839.† As introductory to my own observations I will detail the results of these experiments. Having been made on a number of individuals by an intelligent and cautious hand, they are entitled to our respectful consideration.

In his first paper he gives experiments made upon males of the mean age of 27 years. In them he found the pulse to be as follows: standing, 79; sitting, 70; lying, 67. When all exceptions are excluded the numbers are standing, 81; sitting, 71; lying, 66. In his second paper his experiments are upon females of the same mean age. In them he found the pulse to be standing, 89; sitting, 82; lying, 80; or when all exceptions are excluded the numbers are standing, 91; sitting, 84; lying, 80.

From the whole of his experiments the following conclusions are drawn. First, the pulse of the adult female exceeds in frequency the pulse of the adult male by from 10 to 14 beats. Secondly, the effect of change of posture on the pulse is much greater in the male than in the female, and the disproportion is more marked in early youth. Thirdly, the exceptions to the general rule are more numerous in females than in males. Fourthly, the effect of change of posture is less in early youth than in the adult, and the modifying influence of age is greater in the female than in the male. Fifthly, the exceptions to the general rule are more numerous in early youth than in the adult. Sixthly, the effect produced by change of posture increases directly as the increase of the frequency of the pulse. Seventhly, the excep-

* Philos. Magazine, N. S. vol. 8, p. 63. An interesting abstract of this paper may be found in the *Ann. Jour. Med. Science*, vol. 18, p. 199.

† Med. Chir. Rev. vol. 33, p. 615, and vol. 34, p. 182.

tions to the general rule are more numerous as the pulse is less frequent. Eighthly, the exceptions are more numerous as the effect of the change of posture is less. Ninthly, the effect of the change of posture on the same frequency of pulse in the afternoon, forenoon, and evening is as the numbers 8, 9, and 10.

Mr. Guy was, at first, disposed to believe that the effect of the change of posture was dependent upon muscular contraction. To determine the point he made some experiments with a horizontal board to which the subject of the experiment was secured, in such a manner, that his body might be conveyed from the erect position to any angle with the horizon, without the necessity for any muscular effort. There was no important variation between the results of these and former experiments, whence he concludes that the "effect produced upon the pulse by change of posture is not due to muscular contraction by which the posture is changed," a fact which had been previously ascertained by Dr. M'Donnell by a similar method.*

By the same method also, the body was conveyed from the horizontal to the inverted position with the head downwards and the feet in the air, and although, as might have been expected from the uneasiness of the position, the exceptions were numerous, yet the general results show conclusively that the diminution in the frequency of the pulse steadily increases from the horizontal to the inverted posture, whence the inference is plain that the frequency of the pulse is a *maximum in the erect*, and a *minimum in the inverted posture of the body*.

I now proceed to give in a tabular form my experiments upon this subject, which will be found to include the effect of posture upon the *respiration* as well as upon the *pulse*, between which in health there is always a determinate and a constant ratio. I have also connected with them observations of the thermometer at the same hours in order to ascertain if possible the influence of temperature. The difficulty of doing this, however, is greatly increased by the fact that I was almost always under the influence of an artificial temperature differing from the true temperature of the air by many degrees. As food and exercise always produce a marked effect upon the pulse and respiration, I have given, in the remarks accompanying the table, the different articles of diet and the exercise taken during the continuance of the experiments.

It may be objected by some that these experiments are vitiated by the influence which mental attention to any bodily organ has over its action; an influence which Dr. Holland has made the theme of a distinct dissertation, and of which any one may satisfy himself by the least examination. But to this we may reply in the words of Edwards,† "Si quelquefois la volonté y intervient ce n'est que pour de courts instans. Ils suivent habituellement une marche réglée où la même nombre de mouvemens se reproduit dans le même intervalles de temps."

* See the paper above alluded to.

† D l'influence des agens Physiques, p. 295-6.

Table of Observations on my own Pulse and Respiration.

Nov.	Pulse.			Respira.			Ther.	Remarks.	1839.
	Ly.	St.	Sd.	Ly.	St.	Sd.	Fah.		Weather.
2nd.									
7 A. M.	64	68	76	13	16	20	55	Breakfast of buckwheat between 8 & 9—Rode 15 miles between this & 1 P. M.	Cloudy.
1 P. M.	63	72	84	14	16	18	71		Damp.
3 P. M.	72	76	85	16	18	20	74	Moderate din. of beef soup, chick. & homony.	Wind S. E.
7 P. M.	72	76	85	14	15	18	68	Walked 2 miles since this hour.	
11 P. M.	60	64	70	10	12	14	65	Eat no supper, drank milk and water.	
3d.									
7 A. M.	60	60	65	10	13	15	59	Before and just after rising from bed.	Cloudy, damp,
1 P. M.	60	68	80	13	13	15	63	Full breakfast of B. wheat & beefsteak—Rest.	dark day,
3 P. M.	68	72	84	14	14	15	62	Just after din. of beef, homony, milk & pota.	Drizzle.
7 P. M.	64	68	78	14	16	18	60	Cigar since 3, just after supper of bread, milk and water.	
11 P. M.	60	64	74	11	14	16	56	No exercise to-day.	Wind variable.
4th.									
7 A. M.	59	71	78	11	13	16	52	Before and just after rising—breakfast buckwheat, and beefsteaks.	Slight rain
1 P. M.	81	90	100	18	20	22	63	Just after manual exercise & walking 2 miles.	last night.
3 P. M.	87	85	90	17	18	18	66	Just after dinner of duck, ham, homony, pota-to-pudding.	And this morning
7 P. M.	71	76	80	14	16	18	61	Manual exercise, no supper, milk and water, taste of coffee.	cloudy.
11 P. M.	60	64	68	12	14	16	58	Just after playing on flute for half an hour.	Wind N. E.
5th.									
7 A. M.	60	66	76	10	12	15	60	Before and just after rising.	
1 P. M.	71	72	86	11	15	20	73	Aft. riding 20 m., feet wet with rain; headache	Cloudy.
3 P. M.	72	78	88	12	14	16	79	After riding 5 m. more, beef soup for dinner.	Moderate rain.
7 P. M.	60	76	80	00	15	17	71	Just after an oyster supper.	Wind S. & S. W.
11 P. M.	68	70	80	13	14	16	71	Headache.	
6th.									
7 A. M.	60	72	72	10	12	14	53	Before and after rising—Headache.	
1 P. M.	74	78	84	14	14	16	64	Just after riding 27 miles—Headache.	Clear
3 P. M.	74	76	88	16	16	17	64	Just after dinner of chicken and ham.	Wind
7 P. M.	68	70	84	11	12	14	50	Just after drinking buttermilk & water.	N. & N. W.
11 P. M.	59	59	68	12	14	16	40	Headache relieved, but have slight cold.	
7th.									
7 A. M.	60	74	70	12	15	16	41	Before & after rising—Break., B. wheat, ham.	Frost, clear.
1 P. M.	64	64	76	12	14	16	58	Rode 10 miles since breakfast.	
3 P. M.	74	78	90	16	18	20	59	After dinner of dove, ham, potatoes, homony, buttermilk.	Wind N. W.
7 P. M.	72	70	84	14	16	18	54	After eating bread & milk, walking 2 miles.	
11 P. M.	54	59	68	11	11	14	47	Reading since supper.	Cloudy evening.
8th.									
7 A. M.	60	66	70	10	10	12	31	Before and after rising, breakfast buckwheat and milk.	Ice.
1 P. M.	65	72	86	12	15	18	57	Rest. Reading all the morning.	
3 P. M.	72	74	84	12	12	14	59	After eating chick., ham, rice, potatoes, milk.	Clear.
7 P. M.	64	66	84	14	16	18	46	Rest. Supper, milk and water.	Wind N. W.
11 P. M.	54	56	66	12	15	15	36	Rest. Reading.	
9th.									
7 A. M.	58	64	72	12	14	16	28	Before and just after rising.	
1 P. M.	70	74	86	14	16	18	59	Breakfast buckwheat, cigar, rest, reading.	Clear.
3 P. M.	80	84	92	16	18	62	62	After eating duck, ham, homony, pota., milk.	
7 P. M.	00	00	00	00	00	00	45	Being under temporary excitement omitted.	Wind N. W.
11 P. M.	60	60	68	13	14	15	34	Supper, bread and milk.	
10th.									
7 A. M.	60	72	74	10	10	12	36	Before and after rising from bed.	
1 P. M.	80	76	92	11	13	16	60	After riding 8 miles and walking quarter mile	Clear.
3 P. M.	74	72	84	12	14	16	62	After riding 8 m. more & eating ham & bread.	
7 P. M.	76	78	88	12	15	16	45	After drinking milk for supper.	Wind N. E.
11 P. M.	60	62	68	12	14	15	34	Rest.	
15th.									
7 A. M.	64	68	82	11	13	15	60	Before and after rising from bed.	
1 P. M.	76	88	98	15	17	18	81	Breakfast of buckwheat, walked 2 mile, cold, feel badly.	Clear.
3 P. M.	68	76	84	13	15	18	81	After eating rice and chicken.	Cloudy.
7 P. M.	60	68	80	12	14	16	70	After eating wheat bread.	
11 P. M.	54	56	68	12	14	16	64	Rest. Reading.	Wind S. & S. W.
16th.									
7 A. M.	60	68	72	10	11	11	62	Before and after rising. Breakfast as usual.	
1 P. M.	72	68	84	12	13	16	69	Rest—Reading—some headache.	Cloudy.
3 P. M.	70	72	84	13	15	16	68	After eating ham, chick., homony, pota., milk	Rain last
7 P. M.	60	62	70	12	14	14	65	After eating a little cake & drink. weak coffee.	night.
11 P. M.	54	54	58	12	12	13	60	Rest—Reading.	Wind W.
Mean	66	70	80	12	14	16	58	In round numbers—omitting fractions.	

Remarks on the Table.—1. It will be perceived by reference to the table that, at a mean temperature of 58° of Fahrenheit, which is near the mean for the whole year in this latitude, the mean of from 53 to 55 observations on my own pulse gives the following numbers:—Lying 66; sitting 70; standing 80. By comparing these numbers with those obtained by Mr. Guy, the correspondence will be seen to be very striking, and the more so because the comparison is between the mean pulse of one individual and that of a number experimented on by that gentleman.

2. The numbers of respirations at the same temperature are, lying 12, sitting 14, standing 16; showing a marked correspondence between the pulse and respiration, the same ratio being preserved between the separate means of each individual posture, and the mean of the three postures taken collectively. This ratio, it will be perceived, is 5 : 1—that is five pulses to one respiration, which agrees very nearly with the result obtained by Dr. M'Donnell.* This is certainly an important fact, and may be used to much advantage in the diagnosis and prognosis of disease. I have never known this ratio disturbed to any extent except in bad cases.

3. In order to estimate the influence of temperature, I have compared the mean of two days' observations between which there was the greatest difference in mean temperature, while the other conditions remain nearly the same. For this purpose I have chosen the 1st and 7th, and 2d and 8th. On the first day while the mean temperature was 66° the mean pulse was 72, and the mean respiration 15. On the seventh, the mean temperature being 45° , the mean pulse was 66, and the mean respiration 13—showing obviously an increase of frequency in an increased temperature. But a comparison of the second and eighth days' observations gives a different result. On the former, while the mean temperature was 60° , the mean pulse was 69, and the mean respiration 14—on the latter day the mean temperature being 45° , the mean pulse was 72, and the mean respiration 15. Taking the four days' observations connectedly, however, it will be found that while on the two first days the temperature was 63° , the pulse was 70, and the respiration $14\frac{1}{2}$ —and while on the two latter days the temperature was 45° , the pulse was 69, and the respiration 14, tending to establish the law of *increased frequency by increased temperature*, a result opposed to the experiments and observations of Edwards.† This result, however, should be received with hesitation, from the circumstance, before alluded to, of my having been subjected to an artificial temperature, which must, of course, have modified the influence of the temperature of the air.

4. To determine the ratio of the *diurnal variation* in the pulse and respiration, I have taken the mean of the observations in the three postures at three different periods of the day separated from one another by an interval

* Dr. M'Donnell says from four to six pulses for one respiration.

† De l'Influen. des Agens Physiques.

of eight hours; that is, at 7 A. M., 3 P. M., and 11 P. M., and I find the numbers to be as follows:—at 11 P. M. pulse 62, respiration $13\frac{1}{2}$; at 7 A. M. pulse 64, respiration 13; at 3 P. M. pulse 79, respiration 15. From which it appears that the pulse is slowest in the evening, respiration slowest in the morning, and both most increased in frequency in the afternoon; the ratio of increase between the pulse in the evening and morning being 1 : 1.03, and in the afternoon 1 : 1.28; the ratio between the respiration in the evening and morning being nearly that of equality, and in the evening and afternoon it is as 1 : 1.15. It is possible that the difference in frequency between the pulse in the morning and evening is owing to the absence of light, since the other conditions remain nearly the same, unless we recur to the old hypothesis of exhausted excitability. The difference between the frequency of both the pulse and respiration in the morning and afternoon is no doubt dependent upon the conjoined agency of light, heat, food and exercise; but the conditions of the problem are much too complicated for us to determine satisfactorily the separate influence of each. To do this will require still further observations, and it is to be hoped that the subject will yet receive that attention which its importance demands.

ART. XII.—*On the Curability of Insanity.* By PLINY EARLE, M. D.

SINCE, in different individuals, mental power and its manifestation by speech and action are nearly as diverse as the configuration of the head and the expression of the face, it is evident that the adoption of a fixed standard of intellectual and moral integrity, or of *sanity*, is beyond the bounds of possibility. That which is sanity in one man would be strong evidence of derangement in another. The criterion by which to form a judgment must vary with every individual, and, in each case, that criterion must be the physical, mental, and moral condition of the patient previously to the attack of insanity. Yet, in many cases, it is a point of the greatest difficulty to determine when a perfect restoration is effected. Some patients, by dissimulation, or an evasion of all allusion to the prominent topics of their delusion, may deceive, and thus determine a false, though, in reference to their wishes, it be a favourable decision. In others, the approximation to a normal state of the mental faculties may be so near as to induce the physician, who was unacquainted with them previously to the invasion of the disease, to pronounce them cured, while their intimate friends would still detect eccentricities of both thought and action. Hence, acute perceptive powers, sagacity, a sound judgment, and, not unfrequently, recourse to the opinion of the friends of the patient, are necessary to an accurate judgment. In a given case, one

physician might pronounce a cure to be effected, while another would still perceive traces of disease.

The desire, from pecuniary and other considerations, to remove patients from the asylum as soon as possible, may induce a discharge, with a certificate of restoration, before all evidences of the mental disorder have been removed, although those evidences may not interfere with the prosecution of business, and may, as the person pursues the duties of life, very soon entirely disappear. These considerations might, and undoubtedly do, according to the different nature of public institutions, affect in diverse degrees the practice in regard to discharges. At the York Retreat, according to Thurnam, the term *recovered* is "applied only to those cases where the patient has been so far restored as to appear fully capable of performing, with propriety, the duties belonging to his station in the world: though it is not pretended but that sometimes, perhaps, upon minute examination, traces of mental disorder might still be detected. In a few cases, likewise, where a state of mania had supervened upon one of original imbecility, the patient has been considered recovered, when restored to the care of his friends in the state he was in before the attack. In a small number of cases likewise, which have been removed in an advanced stage of convalescence from the desire of their friends, or from its being supposed in the particular case desirable, the patients have been considered recovered if the convalescence have been confirmed."* Upon the same subject Dr. Brigham, of the Hartford Retreat, speaks as follows, "By recovered, we usually mean complete restoration of the mental powers. Two of the individuals discharged this year and reported as recovered, are still very eccentric, though they do not now manifest any thing that their friends call insanity, are able to attend to their affairs, and are as well as they were for several years before they were called insane. Some few other individuals, though reported recovered, did not, when they left us, exhibit their former mental vigour: from several of these we have heard that, at home, they have either entirely recovered in this respect, or are steadily improving."† It is probable that the practice at these two institutions very nearly corresponds with that at most others. It is worthy of remark that an enlarged mental capacity, with greater activity of intellect, sometimes supervenes upon or accompanies a recovery from insanity. Several cases of the kind have come under our observation, and others are reported by Drs. Brigham and Kirkbride. In what manner can Heinroth, Leuret and their disciples, the metaphysicians *par excellence* of insanity, the advocates of the doctrine of mental disease unaccompanied by physical lesion, either organic or functional, account for this phenomenon? For the phrenologist or the physiologist the explanation is perfectly easy and rational.

* Statistics of the Retreat, near York, from its establishment in 1796 to 1840.

† Eighteenth report of Hartford Retreat, p. 10.

In the language of Dr. Brigham, "the unusual and long continued excitement of the brain has permanently increased its power and activity."*

It remains to be demonstrated whether the insane of any particular nation are more easily cured than those of any other. The assertion of Esquirol, which is denied by Dr. Burrows, that a greater proportion recover in France than in England, is based upon the result of the collected statistics of four English and three French asylums; an observation obviously too limited to justify so sweeping a conclusion. General truths can never be obtained from data so limited and so partial. The available information upon this subject is vastly more extensive than at the time in which Esquirol wrote, but still is insufficient to justify a final decision. It will be presented in one of the following tables.

The age and sex of the patient; the cause, the type and the duration of the disease; the season and the plan of medication, are among the influences which, to a greater or less extent, modify the results of treatment, increasing or diminishing the proportion of cures.

1. *Age.* Esquirol remarks that very few patients recover who are more than 60 years of age, and maintains, with most other authors, that while the young are most easily restored, the difficulty of effecting a cure increases progressively with advancing years. The results at the York Retreat for forty-four years corroborate the truth of this opinion. The recoveries of those from 10 to 20 years of age were equal to 55·55 per cent. of the admissions, and the proportion for each subsequent decade of life was as follows: 53·55; 50·00; 47·50; 44·83; 35·61; 20·00; 25·00 per cent. At the York Lunatic Asylum the results were similar, though the diminution was less regular. The evidence of Dr. Woodward's observations is in direct contravention to the above. "It still continues," says he, in his report for 1841, "to be an interesting fact deducible from our records, that persons attacked with insanity after forty years of age, recover in much greater proportion than those attacked before that age."

2. *Sex.* At the York Retreat "recoveries amongst women have been more numerous than amongst men, under nearly all circumstances of form and duration, of disorder and of age."† At the Worcester Hospital, of patients under twenty-five years of age, the proportion of cures has been greatest among females. Of those under twenty, sixty-six per cent. of the females and only thirty-six per cent. of males have recovered. At Charenton, during a period of nine years, the proportion of cures to admissions was, in men, as 1 to 3; in women it was a little greater. At the asylum of Rouen during ten years, it was in men as 1 to 4·3; and in women as 1 to 3. At Bicêtre, for nine years, it was in men as 1 to 3·7; and at Salpêtrière, in women, during the same period, as 1 to 2·94. To these facts we may add the following.

* Eighteenth report of Hartford Retreat, p. 11.

† Statistics, p. 32.

ASYLUMS.	TIME.	MEN.			WOMEN.		
		Admitted.	Cured.	Per cent.	Admitted.	Cured.	Per cent.
Hanwell,	1831 to 1840	1013	223	22.01	1016	226	22.24
Penn. Hospital,	1841	103	15	14.56	73	15	20.54
Bloomington,	1821 to 1841	1692	848	50.12	906	352	38.91
Mass. State,	1833 to 1841	680	365	53.67	637	392	61.53
Total.		3488	1451	35.09	2632	985	35.80

With the single exception of the statistics of the Bloomingdale Asylum, all the evidence here adduced, both in the table and that which precedes it, substantiates the opinion that females are more curable than males. It has before been remarked, that the asylum which furnishes the exception receives many cases of mania-à-potu. These are mostly of men and are generally restored. Hence the augmentation of proportion in their favour.

3. *Cause of disease.* Our knowledge of the influence exerted by the causes of mental derangement upon the probability of recovery is very imperfect, and must necessarily so remain so long as those causes themselves continue to be involved in so much obscurity. When these can invariably be ascertained, positive results may be arrived at in regard to the subject in question. In cases where the causes continue to operate, a restoration cannot be expected at so early a period as where they have ceased to exert their influence: and, as a general rule, although there may be some exceptions, where the cause is physical, the removal of it is necessary to the accomplishment of a cure. The only definite observations numerically expressed with which we have met, are those of Drs. Woodward and Awl, at the State Hospitals of Massachusetts and Ohio. From the last reports by these gentlemen we have compiled the following table, exhibiting the proportion of cures from several causes or classes of similar causes.

CAUSES.	WOODWARD.			AWL.			TOTAL.		
	Admitted.	Cured.	Per cent.	Admitted.	Cured.	Per cent.	Admitted.	Cured.	Per cent.
Intemperance,	210	108	51.43	25	18	72.00	235	126	53.62
Religious,	101	64	63.37	41	26	63.90	142	90	63.38
Masturbation,	118	32	27.12	20	5	25.00	138	37	26.81
Epilepsy,	38	4	10.52	20	2	10.00	58	6	10.34
Ill health,	278	182	65.47	101	49	48.51	379	231	60.95
Dom. Affliction,	330	200	60.60	40	17	42.50	370	217	58.64

There is a remarkable similarity in the proportion of cures at the two institutions of the cases attributed to masturbation, epilepsy, and religious excitement. The last mentioned cases appear to be the most curable, those arising from ill health the next so, while those from other causes grow less so in the following succession, viz. domestic affliction, intemperance, masturbation, and epilepsy. "Of all lunatics," says Belhomme, "those whose disease is the offspring of pride, including disappointed ambition, have a character which makes them resist all treatment. They are so easily

offended, so irascible and furious, that they become angry with every thing which caresses them, and that which caresses them confirms their disease. This is the reason why they are so incurable.”*

4. *Form of disease.* The nosological distinctions in regard to mental alienation are to a certain extent arbitrary, and the classification of patients agreeably thereto, is in some cases not only difficult, but absolutely impossible. Indeed, there are those who, at several different periods of their disease, exhibit the specific peculiarities of each of the prominent divisions of the affection. In a majority of cases, however, the type is perhaps sufficiently evident and constant to admit of accurate classification. The subject of recovery in relation to the form of disease has not extensively occupied the attention of writers. In the statistics of the York Retreat it is noticed, and the per centage of cures on the admissions is given as follows: mania 53.43; melancholia 54.88; monomania 31.25; and dementia 2.08 per cent. At the Massachusetts State Lunatic Hospital, of 1,359 cases admitted, 1,296 are classified, and the number of cures in each division given: mania 672, of which 438 or 65.18 per cent. were cured or curable: melancholia 434, and 253, or 58.29 per cent. curable: dementia 179, and 8 curable: idiots 11. Dr. Woodward rejects monomania, as an insufficiently distinctive type to form a species. From the above, it appears that while the melancholiacs were the most curable at York, the maniacs were so at Worcester.

5. *Duration of disease.* The lesion upon which intellectual aberration depends, although it may be functional, appears rapidly to assume a chronic nature, confirming and perpetuating the disease. The paramount importance of an early recourse to remedial agents is universally recognised by the members of the medical profession. When thus immediately subjected to treatment, the proportion of cures is perhaps greater than in any other malady equally acute. In no department of the profession are the triumphs of medical science more strikingly illustrated than in this. “About nine out of ten cases recover,” say Drs. G. and S. White, in the report of their asylum, “when brought to this institution within three or four months after insanity has developed itself.” Dr. Willis, the elder, likewise asserted that of the patients under his care whose disease was of less than three months duration nine out of ten were restored, and George Hill corroborates the assertion in regard to his own experience.† Dr. Burrows cured more than 90 per cent. of this class of cases, and Samuel Tuke, whom all will unite in exculpating from a proneness to exaggeration, remarks that, excluding those advanced in other diseases which soon terminate life, and those who from early life are eccentric, but when admitted, are called “recent,” he should say that according to the result of his experience, “the probability of recovery from insanity in recent cases is greater than as nine to one.” The testimony of the physi-

* *Considérations sur l'appréciation de la Folie, sur sa localisation et son traitement.*

† *On the Prevention and Cure of Insanity, by George Nasse Hill.*

cians to several of the American Asylums coincides with the above.—Subjoined is a table showing the results of treatment in old and recent cases

ASYLUMS.	TIME.	RECENT.			CHRONIC.		
		Admitted.	Cured.	Per cent.	Admitted	Cured.	Per cent.
Wakefield, Eng.,	17 years,	1091	594*	54.44	516	58	11.24
Dr. Burrows,		242	221	91.32	54	19	35.18
Maine State,	1½ "	53	28	52.83	82	6	7.31
Mass. State,	1833 to 1841	556	466	83.75	742	239	32.21
Ohio "	1839 " 1840	134	93	69.40	209	31	14.83
Boston City,	1839 " 1841	35	17	48.56	118	2	1.69
Hartford Retreat,	1824 " 1839	537	451	84.00	464	112	24.1
Bloomingtondale,	1823 " 1841	1336	1020	76.33	1037	120	11.5

The object of this table is rather to present details in a condensed form, than to derive a conclusion from the results of their union. The conditions of the several minutiae are so different as to contravene an attempt to make of them a homogeneous mass. The per cent. of Dr. Burrows's cases was calculated upon the whole number curable; that of the Wakefield patients upon those of first attack alone, and that of those of most of the American asylums is based upon the ratio of those discharged, cured, to the number of admissions. Had the last been from the ratio of *cures to discharges* the result would have appeared more favourable. Thus calculated, it would be for the Ohio Asylum, 3 years, 86.11 on recent and 33.33 on old cases; for the Maine Asylum 71, on recent; and 14.62 on old cases. At the Massachusetts Hospital, the curables of the recent cases were equal to 90 per cent. At asylums which have been but a short time in operation, like those of Maine and the city of Boston, the proportion of cures to the number of admissions must necessarily be small.

The physicians of the Worcester, Frankford and Columbus Asylums have arranged their cases for exhibiting the curability in regard to duration in a manner peculiar to themselves. Their statistics are combined in the table below.

ASYLUMS.	TIME.	Duration less than one year.		1 to 2 years.		2 to 5 years.		5 to 10 years.		10 to 15 years.		15 to 20 years.		20 to 25 years.		25 to 30 years.		Over 30 years.	
		Ad.†	C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.	Ad. C.
Ohio, Columbus,	3 years,	146	113	56	21	76	11	40	4	21	2	7	1	6	0	2	0	0	0
Mass., Worcester,	9 "	575	518	222	130	218	82	147	20	87	6	31	1	24	0	7	0	6	0
Frankford,	25 "	338	193	68	22	103	33	58	15	68	0								
		1059	824	346	173	397	126	245	39	108	8	38	2	30	0	9	0	6	0

In the cases of the Frankford Asylum, all those of more than ten years duration are included in one sum (68), without discriminating between those which, by a more detailed arrangement, would come within the higher quinquennial periods. For this reason, that sum is not included in the total number beneath it. The regular and rapid approximation to absolute incurability

* First attack only.

† Ad.—Admitted. C.—Cured.

is admirably exhibited in the aggregate numbers in this table. The proportion of cures in the successive columns is as follows: first, 77.95; second, 50.00; third, 31.73; fourth, 15.91; fifth, 7.40; and sixth, 5.26 per cent. Of the cases included in the remaining columns, none were restored to health.

Within the last two years, the physicians of some of the American asylums have discontinued the practice of reporting, under separate heads, the results of treatment in the "recent" and the "chronic" cases under their care. The primary reason for abolishing this distinction is the difficulty of accurately ascertaining the positive duration of the disease. There is much cogency in the argument. All who have been concerned to any considerable extent in the treatment of the disease, must appreciate it, since they cannot have failed to observe the uncertainty which involves, like a cloud of darkness, many cases in this respect. The distinction, however, which had theretofore been made, was at least a sufficient approximation to accuracy to furnish a basis for the positive demonstration of the advantage of early treatment. This object being effected, perhaps no utility can result from the continuance of a custom which can never terminate in absolute mathematical certainty.

6. *Season.* At Charenton, from 1826 to 1833, at Bicêtre and Salpêtrière, from 1822 to 1824; and at the Worcester, Mass., Asylum, from 1833 to 1841, all inclusive, more cures were effected in autumn than in any other season of the year.

We do not propose to discuss the different plans of medical treatment, but proceed to a tabular exhibition of the whole number of cures in various institutions, both American and European.

Asylums.	Time.	No. of years	Patients Admitted.	Recovered.	Per cent. on admissions.	Remarks.
AMERICAN.		From				
Maine, State Asylum	1840 to 1841	1½	135	34	25.18	
Massachusetts, do. do.	1833—1841	9	1359	588	43.33	
Vermont, do. do.	1837—1841	5	396	163	41.16	
Maryland, do. do.	1835—1840	5	393	135	34.35	
Virginia, do. (Williamsburg)	1841—1841	6 mos.	16			
" " (Staunton)	1828—1836	8 yrs.	79	13	16.45	
" " "	1836—1841	5½	131	51	39.	
Ohio State, do.	1839—1841	3	343	124	36.15	26 favourable cases remaining.
Kentucky, do.	1824—1840	16½	841			
" "	1839—1840	2	151	27	17.88	
McLean Asylum	1818—1834	16	1122	403	35.91	51 idiots, and epileptics.
" "	1835—1841	7	891	474	53.19	
Boston City	1839—1841	1½	153	19	12.42	
Hartford Retreat	1824—1841	17	1068	600	56.17	
Pennsylvania Hospital	1752—1840	88	4366	1493	34.19	
" Lunatic Hosp.	1841	1	176	30	17.04	
New-York City Hospital	1808—1821	15	1144	509	44.48	
" Bloomingdale	1821—1841	20½	2598	1200	46.20	
" Bellevue	1791—1821	30	1553	704	45.33	

Asylums.	Time.	No. of years.	Patients admitted.	Recovered.	Per cent. on admissions.	Remarks.
Frankford Asylum Dr. White's, Hudson	From 1817 to 1841 1830—1840	25 10½	784 503	336 230	42.90 45.72	Some intemperate;— not insane.
ENGLISH.						
<i>County Asylums.</i>						
Gloucestershire	1823—1832	9½	514	231	44.94	Paupers and others.
Kent, Maidstone	1833—2838	5	353	73	20.68	Paupers; 24 idiots.
Lancaster	1816—1840	24	3241	1302	40.17	
Nottingham	1812—1840	28½	1434	618	43.09	Four-fifths paupers in 1840.
Middlesex, Hanwell	1831—1840	9½	2029	449	22.12	All paupers.
Stafford	1818—1840	21	2460	1060	43.08	Two-thirds paupers.
Suffolk, Woodbridge	1829—1841	12	935	379	40.53	Three-fourths paupers.
York, W. R., Wakefield	1818—1841	22	2879	1272	44.18	All paupers.
<i>Voluntary or Endowed.</i>						
Bethlehem, London	1684—1703		1294	890	69.77	
" "	1768—1794		8874	2557	28.81	
" "	1813	1	422	204	48.34	
" "	1827—1839	13	3018	1538	50.96	
St. Luke's, London	1751—1834	83	15402	6117	39.71	
Manchester	1766—1840	74	2922	1125	38.50	Paupers and others.
York L. Asylum	1777—1814	37	2635			
" reorganized	1814—1840	25½	1272	431	33.88	One-third paupers.
York Retreat	1796—1840	44	550	276	50.18	Soc. of Friends alone.
Exeter	1801—1840	39	1295	679	52.43	Paupers and others.
Lincoln	1820—1840	19½	773	310	40.10	Three-fourths paupers.
Radcliffe, Oxford	1826—1839	13½	376	188	50.00	Poor, but not paupers.
<i>Description Unknown.</i>						
Liverpool	1836	1	102	46	44.65	
Hereford	1817—1819	2	47		49.	
Leicester	1795—1819	24	483		66.	
Norwich	1813—1819	6	260		52.	
SCOTCH.						
<i>Chartered.</i>						
Aberdeen	1830—1840	10	441	199	45.12	Paupers and others.
Glasgow	1814—1841	27	2490	1112	44.65	" " "
Dundee	1820—1840	20	812	344	42.36	" " "
Perth	1827—1838	11	331	111	33.53	Endowed.
Montrose	1782—1840	58	706	281	39.80	Paupers and others.
IRISH.						
<i>District.</i>						
Armagh	1825—1840	15	1098	493	45.27	} All paupers.
Belfast	1829—1840	11	1013	490	48.37	
Carlow	1831—1840	9	404	188	46.53	
Clonmell	1835—1840	5	291	129	44.32	
Balinasloe	1833—1840	7	665	225	33.83	
Cork	1833—1840	7	1534*	714	46.54	
Limerick	1827—1840	13	1325	691	52.15	
Londonderry	1829—1840	11	960	436	45.41	
Maryborough	1833—1840	7	403	167	41.43	

* Under treatment.

Asylums.	Time.	No. of years	Patients admitted.	Recovered.	Per cent on admissions.	Remarks.
Richmond, Dublin	From 1831 to 1840	9	1016	498	49.01	} All paupers. Soc. of Friends alone.
Waterford	1835—1840	5	278	91	32.73	
Retreat, Dublin	1812—1840	28	89	26	29.21	
CONTINENTAL.—FRENCH.						
Salpêtrière and Bicêtre	1801—1821	20	12592	4968	39.45	All paupers.
" "	1822—1834	12	10779	3627	33.64	
Charenton	1826—1833	8	1557	518	33.26	Many epileptics.
"	rejecting epileptics		1205	518	42.82	
Esquirol's, private	1801—1813	12	335	173	51.64	
ITALIAN.						
Senavra, Milan	1802—1827	25	6006	3516	58.54	
Turin	1827—1836	10	1066	466	45.59	
Aversa	1813—1833	20	3897	1514	38.85	
GERMAN.						
Schleswig	1820—1835	15	566	166	29.51	All under treatment.
Siegburg	1825—1840	15	1129	347	30.73	
DUTCH.						
Amsterdam	1835—1837	2½	163	56	34.35	
Utrecht	1832—1837	6	255	104	40.78	

The foregoing table includes the statistics of one private and sixty-three public institutions for the treatment of the insane. The private institution is American. Of the public, sixteen are American, twenty English, five Scotch, twelve Irish, three French, three Italian, two German and two Dutch.

The whole number of patients therein reported is *one hundred and twenty-five thousand one hundred and seventy-eight* (125,178); but of these, *seven hundred and ninety-two* have the corresponding *per centage* without the number of cures, and *three thousand four hundred and ninety-two*, have no result of treatment reported. Of the remaining *one hundred and twenty thousand seven hundred and ninety-six* (120,796), the number of cures was *forty-nine thousand and forty-six* (49,046), a proportion of forty and six-tenths to the hundred.

In the subjoined table the proportion of cures in the asylums of the several countries respectively is given under two different aspects. The first, the "average" per cent., is obtained by adding the per cents of the asylums of the country and dividing by their number; the second, the "total" by dividing the whole number of cures by the whole number of admissions. The latter method can alone lead to an accurate result. The former, although apparently correct, insomuch that it has frequently been resorted to, may lead into very great error. Thus, if at one asylum the number of admissions be

40,000, of cures 2,000, and the consequent per cent of cures 5; and at another asylum the admissions be 4,000, the cures 2,000 and the per cent 50; then the "average" per cent will be $\frac{50+5}{2} = 27.5$.—Whereas the true one, obtained by division of the aggregate number of cures by the like sum of admissions is $= \frac{2000+2000}{40000+4000} = \frac{4000}{44000} = \frac{4}{44} = 9.09$. Here we might be led into the error of believing the proportion of cures to be *twenty-seven and a half* to the hundred, when in reality it is but *nine and nine-hundredths*.

Asylums.	Average per cent.	Per cent. on totals.	Asylums.	Average per cent.	Per cent. on totals.
American	30.89	41.13	Scotch	41.09	42.82
" rejecting <i>four</i>	40.96	41.98	Irish	42.90	45.72
English, county	37.34	38.88	French	39.49	36.71
" voluntary or endowed	45.69	39.54	Italian	47.66	50.10
" 4: description unknown	52.91		German	30.14	30.79
" aggregate		39.21	Dutch	37.56	38.27

The dissimilarity in the nature of institutions for the treatment of the insane is such that, unless a reasonable allowance be made, injustice might be done to some of them while considering a tabular approximation of their results. Thus, some are under the protection and management of municipal governments; others are endowed and under the care of a board of trustees; while a third class are private institutions. Some, as the Bicêtre Salpêtrière and Hanwell asylums, receive paupers exclusively; others, both paupers and pay-patients; a third class, pay-patients alone, and in some instances, those are chiefly from the most wealthy portion of society. At the pauper institutions just mentioned, and at those of Gloucester, Lancaster, Stafford, Wakefield and some others, there can be no selection of patients, the admission of all applicants being obligatory; while in other asylums reception or rejection is optional with the officers. Some endowed institutions are virtually upon a par with those for paupers in this respect. Thus, at Bloomingdale they "reject no application for admission, whatever the state or condition of the patient, curable or incurable, in ordinary physical health or *in articulo mortis*."* The Bethlehem and St. Luke's Hospitals, London, do not admit paralytics, epileptics, the aged and the feeble, or those discharged as incurable from other asylums. All who do not recover during the first year are discharged. At Siegburg no patient is admitted whose disease is of more than eight months standing, and, as at Bethlehem, no one is permitted to remain longer than one year. At the Hartford Retreat and the McLean Asylums no one is admitted for a less period than three months; whereas, in most institutions, there is no restriction in regard to time. As a necessary effect of the differences mentioned, as well as of locality and some other influences, particular types of disease will pre-

* Report for 1842.

dominate, each at one institution or more. Thus at the Kentucky State Asylum there is a very large number of idiots,—cases necessarily incurable; while at the Bloomingdale Asylum and the Pennsylvania Hospital, there are many cases of mania à potu, a very large proportion of which are susceptible of restoration. Acute phrenitis, a disease which is rarely cured, will be met with much more frequently in those institutions which are near large cities, than in those which are remote from the great foci of population.

The length of time the asylums have been in operation modifies, to a very considerable extent, the numerical results of treatment; and data of this kind, exhibiting its accurate bearing in relation to the disease, cannot be obtained until those institutions have existed a number of years. The mortality during the first few years is much less than in subsequent periods, with the exception of those establishments from which the patients are invariably discharged at the expiration of a year from the time of entrance. The proportion of cures may be greater or less than the average, according to the nature of the patients first received. At the pauper asylum of the city of Boston, at which, within *thirty days* from its time of opening there were 73 chronic cases admitted, while but 8 recent cases were received during the first *six months*, the proportion of cures could not be otherwise than small. In subsequent years it would be larger, since the relative number of chronic cases would necessarily be diminished. Finally, it may be remarked that, when these and other circumstances influencing the condition of patients and of their disease are taken into consideration, we are surprised that in the results of the institutions of either country, or of all countries combined, the discrepancy is so small, rather than that there should be so much departure as there is from uniformity.

The time required for the cure of mental diseases varies according to the specific nature of the malady, and from other causes, which are but too frequently inappreciable, while some cases which at first aspect appeared discouraging are restored in a few weeks, others, which from the symptoms may have justified the prognosis of a rapid cure, linger from month to month, and if they be ever restored, it is after the lapse of perhaps a year or more.

The physicians of some asylums publish the average time of residence in their respective institutions of such patients as are eventually discharged recovered. At the Bicêtre in 1821, the average was eighty days; and at Salpêtrière, the same year, one hundred and forty-nine days. In 1822, 1823 and 1824, it was four and a half months at the former, and nine months twenty-five days at the latter. At the York Lunatic Asylum, for 25 years ending in 1840, it was 65-100ths of a year; at the York Retreat, for 44 years, ending in 1840, one year and 32-100ths; at the Massachusetts State Asylum of the recent cases in 1841, “about four months;” at the Maine State Asylum in 1841, of the recent cases $14\frac{1}{4}$ weeks, and of the chronic $17\frac{2}{3}$ weeks; and at the Gloucester Asylum for those of less than one month’s standing, 19 weeks, and of those from one to three months, 33 weeks. M. Desportes

attributes the prolonged time of residence of the women, beyond that of the men, in the Parisian hospitals, to the assumed fact that their nervous system is more seriously involved by the disease, and hence requires a greater length of time for restoration to its natural integrity. The circumstances of the York Retreat are such that "pecuniary considerations in no case either retard admission into or hasten discharge from" it.* This is probably a sufficient explanation of the longer term of residence in that asylum than in any other of which we have the numerical records. The following analysis of the cases treated at the Massachusetts State Hospital, Worcester, is by Dr. Jarvis.†

Duration of insanity before entering the hospital.	Number of cases.	Average length of disease before entering the hospital.	Average time required for cure.
1 month and under . . .	115	18 days	15½ weeks.
1 to 3 months	145	71 days	17 "
3 " 6 "	79	22 weeks	18 "
6 " 9 "	32	8 months	23½ "
9 " 12 "	36	11 " and 3 weeks	29 "
1 " 5 years,	65	35 " " 2 "	36 "
5 years and more . . .	17	122 " " 3 "	39 "

It would appear that in treating upon the subject of relapse, some writers have not sufficiently discriminated between those cases, which are actual relapses before a fundamental cure has been effected, those in which the disease is paroxysmal or periodical, and those in which a second attack has been induced, either by the original or some other exciting cause, after an absolute restoration had been effected.

The liability to recurrence or relapse is probably greater in this disease than in most others, inasmuch as a large proportion of patients have the diathesis of insanity, or a predisposition to the affection either constitutional or hereditary. Of those not included in this class, the liability to relapse, or to a subsequent invasion of the disease, is undoubtedly greatest in those cases in which the nervous system or dynamic apparatus has been the most deeply implicated, and consequently suffered the severest shock. Sir William Ellis says that, in puerperal cases, the irritation of future pregnancy is very likely to provoke a return of the affection. In the statistics of the York Retreat, it is remarked, that the liability to recurrence after the first attack of insanity is equivalent to at least fifty per cent. of the whole number of cases that recover. Of the patients treated in that institution the proportion was greater, being 65·6 per cent. Belhomme believes that females more frequently suffer a second attack than males. In 1821, of 311 males received at Bicêtre, 52 or ⅓th had had a previous attack, and of 454 females at Salpêtrière, 66, or ⅓th were of a similar description. At these two asylums, of 2507 admissions in 1822, '23 and '24, 86 men and 96 women

* J. Thurnam, in "Statistics of the Retreat."

† Insanity and Insane Asylums, p. 39.

had previously been treated in those institutions, and discharged cured. Of these, 64 had not been away from the hospitals three months; 21 had been absent from 3 to 6 months, 36 from one to two years, 24 from two to three years, 17 from three to four years, 10 from four to five years, and 10 from five to six years. Again, at the same asylums in 1825, '26 and '27 the proportion of recurrences to the number admitted was, of men $\frac{1}{12}$ th, and of women $\frac{1}{6}$ th; in 1828, '29 and '30, of men $\frac{1}{10}$ th, of women $\frac{1}{13}$ th; in 1831, '32 and '33, of men $\frac{1}{9}$ th, and of women $\frac{1}{22}$ d. Desportes attributes the smaller relative number of relapse or recurrence in women in these institutions, to the fact that they remain longer under treatment after a restoration appears to be nearly or quite effected: their health being thus more permanently established. Notwithstanding the rational inference from these data, Desportes appears to think that, *cæteris paribus*, recurrence is more frequent in males than in females, and attributes this difference to the more general prevalence of libertinism among the former. Belhomme believes insanity to be more frequently idiopathic in men, and symptomatic in women; and hence the lesion in the former being more generally seated in the brain, it is rational to suppose that recurrence would be more frequent.

At the Pennsylvania Hospital, Blockley, of 176 admissions, 142 were of the first attack, 21 of the second, four of the third, 3 of the fourth, 2 of the fifth, 1 of the sixth, 1 of the *seventeenth*, 1 of the *twentieth*, and 1 of the *twenty-first*. At the Frankford asylum, of 784 patients, 96 were of the second admission, 28 of the third, 8 of the fourth, 2 of the fifth, 1 of the sixth, and 2 of the tenth. Of the 96 admitted the second time, 51 had been discharged cured of the first attack. At the time of readmission, 19 had been discharged less than three months, 9 of them cured; 12 from 3 to 6 months, 3 of them cured; 16 from 6 to 12 months, 13 of them cured; 11 from 1 to 2 years, 8 cured; 10 from 2 to 3 years, 4 cured; 9 from 3 to 5 years, 5 cured; 16 from 5 to 10 years, 7 cured; and 3 more than 10 years, 2 cured. Of 240 readmissions, at Wakefield, 39 were in less than three months after the former discharge, 31 from 3 to 6 months; 21 from 6 to 9 months; 23 from 9 to 12 months; 51 from 1 to 2 years; 34 from 2 to 3 years; and 80 from 3 to 10 years.

Mortality. It appears to be generally conceded that insanity abridges to no inconsiderable extent, the duration of human existence, notwithstanding the assertion of Dr. Prichard, that it "cannot be reckoned among the diseases which are very dangerous to life."* Although a large number of lunatics survive an attack for many years, and not unfrequently attain the three score years and ten allotted to man, yet the disease is so frequently the consequence of encephalic congestion and irritation, or other cerebral lesions; it is in so many instances connected with and perhaps the result of disorders of the thoracic, the chylopoietic and other abdominal viscera, that a prolongation of the life of the insane to the average of human existence can hardly be

* Op. cit.

supposed as probable.* The average age of the men who have died at the Asylum of Rouen is 45 years. At Bicêtre and Salpêtrière in 1822, '23 and 24, of 1091 deaths, the ages in 480 cases were less than 50 years. The average age of men, however, was $52\frac{1}{2}$, and of women $51\frac{1}{2}$ years. At the same institutions in 1825, '26 and '27, the average for men was $42\frac{2}{3}$, for women $50\frac{2}{3}$; in 1828, '29 and '30, for men $48\frac{1}{4}$, for women $53\frac{2}{3}$; and in 1831, '32 and '33, for men $47\frac{7}{8}$, and for women $50\frac{1}{3}$ years. During the twelve consecutive years here mentioned, the number of deaths being 5945, the average for men was 49 years 6 months, and for women 51 years $7\frac{3}{4}$ months; the latter living to the greater age.

At the Massachusetts State Hospital, from 1833 to 1841, inclusive, the mean average age of 99 patients who died was 46.4 years, that of men being 47.2 and that of women 45.6 years. At the York Retreat and the York Lunatic Asylum, the average age of women exceeds that of men by about three years. At the former institution the average in both sexes, of all patients belonging to the society of Friends is 56.5 years, and of others 47.7 years. At the latter, the average is 49.5 years. The most accurate investigations upon the subject before us are those of J. Thurnam of the York Retreat.

After having stated the average age at which 139 patients who died in that institution were attacked, to be, for those connected with the society of Friends 39.19 years, and for others 38.36 years, he thus proceeds: "Now the expectation of life at thirty-eight and thirty-nine years of age, according to the most recent researches, is not less than twenty-eight years;† so that the mean ages attained should have been *sixty-seven* and *seventy-six*, instead of *fifty-six* and *forty-seven* respectively, (as was the case). In those connected with the society of Friends, less than two-thirds, and in the others not more than a third of the expectation of life at the time of attack was realized.

* We have the following examples of long life in the insane.

At Salpêtrière, from 1808 to 1813, of 2,804 patients 780 were more than 50 years of age; and from 1816 to 1821, of 2,451, 880 were over that age. Of the last-mentioned, 474 were more than 60 years old. At York Retreat, of 126 patients who died, 57 or 45 per cent. were upwards of 60, and 14 or 11 per cent. from 80 to 97 years of age. At the Pennsylvania Hospital, Blockley, of 176 patients in 1841, 43 were more than 50 years old. At the Boston City Asylum in 1840, of 208, 32 were more than 50, and 2 more than 70; and at the Worcester Massachusetts Asylum, during the first nine years, of 1359 patients, 263 were more than 50.

The most remarkable instance of longevity in the insane that has come within our knowledge, is that related by Dr. Burrows, of a patient of Dr. Langworthy. This patient had been under the care of the physician mentioned sixty-nine years, and at length died, in 1821, at the advanced age of 104 years. He generally enjoyed good health aside from the lesion affecting the manifestations of mind, and worked in the garden until within a few weeks before his death.

† See Finlaison's *Tables of Expectation of Life*: "Maculloch's Statistical Account of the British Empire," 1837, vol. 1, p. 419. Also Table for the Society of Friends; "Rules of the Friends' Provident Institution," 1836, p. 45.

This is one way in which the prejudicial influence of insanity upon the duration of life may be shown.

"The average age at death of those who recovered and were discharged, differed but slightly from that observed in the institution itself; and the average age at attack was very similar. The experience out of the institution, as to the influence of insanity upon the duration of life, *even in those who recovered*, is thus seen to confirm that in the Retreat itself.

"The mortality in England and Wales for the seventeen years from 1813 to 1830 was, according to Edmonds, 2.12 per cent. at all ages; and that of persons of adult age, with which the mortality of hospitals for the insane should be compared, can only be estimated a few fractions higher. The mortality then, at the Retreat was *double*, and that at the York Asylum *treble* that of the general population."*

The statistics of vitality, and those of the asylums for the insane, are not sufficiently perfect, in this country, to enable a faithful or accurate calculation of this kind.

In the subjoined table, the mortality at numerous institutions is recorded.

Asylums.	Time.	No. of years.	Admissions.	No. annually resident.	Died	Per cent. on admissions.	Per cent. on numbers annually resident.	Remarks.
AMERICAN.								
Maine, Augusta	From 1840 to 1841	1 $\frac{1}{2}$	135		6	4.44		
Mass'tts, Worcester	1833—1841	9	1359		102	7.50		
Vermont, Brattleboro'	1837—1841	5	396		21	5.32		
Maryland, Baltimore	1835—1840	5	393		34	8.65		
Virginia, Williamsburg	1841	$\frac{1}{2}$	16					
" Staunton	1836—1841	5 $\frac{1}{2}$	131		21	16.00		12 in 1840 by dysentery.
Ohio, Columbus	1839—1841	3	343		36	10.49		
Kentucky, Lexington	1824—1840	16 $\frac{1}{2}$	841		337	40.65		43 of Asiatic cholera.
McLean, Charleston	1818—1834	16	1122		96	8.55		
" "	1835—1841	7	891		75	8.41		
Boston, S. Boston	1839—1841	1 $\frac{1}{2}$	153		9	5.88		
Retreat, Hartford	1824—1841	17	1068		69	6.45		
Penn. Hospital, Philad.	1752—1841	89	4366		610	13.97		Many of man. & potu.
" " Blockley	1841	1	176		9	5.11		
Bellevue, N. Y.	1791—1821	30	1553		154	9.91		
Bloomington, do.	1821—1841	21	2598		240	9.25		
Frankford, Pa.	1817—1841	25	784		108	13.77		
ENGLISH.								
Gloucester	1823—1832	9 $\frac{1}{2}$	514	83.36	57	11.08	7.19	
Kent	1833—1838	5	353	133.40	83	23.51	12.44	
Lancaster	1816—1840	24	3241	291.5	1261	38.90	18.01	
Nottingham	1812—1840	28 $\frac{1}{2}$	1434	80.79	168	11.71	7.34	
Hanwell	1831—1840	9 $\frac{1}{2}$	2029	601.3	656	32.33	11.69	
Stafford	1818—1840	21	2460	158.6	451	18.13	13.53	

* Statistics of the Retreat, p. 39, 40.

Asylums.	Time.	No. of years.	Admissions.	No. annually resident.	Died.	Per cent. on admissions.	Per cent. on numbers annually resid't.	Remarks.
	From							
Suffolk	1829 to 1841	12	935	159.5	236	25.24	12.32	
Wakefield	1818—1841	22	2879	255.5	909	31.57	16.16	
Bethlehem	1827—1839	13	3018	226.9	209	6.92	7.08	
St. Luke's	1751—1834	83	15402	189.9	1539	9.99	9.76	
Manchester	1766—1840	74	2922		401	13.72		
York L. Asylum	1777—1814	37	2635	98.1	399	11.38	11.00	
“ reorganized	1814—1840	25 $\frac{3}{4}$	1272	135.	255	20.04	7.35	
“ Retreat	1796—1840	44	550	62.35	126	22.90	4.59	
Exeter	1801—1840	39	1295		113	8.72		
Lincoln	1820—1840	19 $\frac{3}{4}$	773	57.6	128	16.34	11.30	
Radcliffe. Oxford	1826—1839	13 $\frac{1}{2}$	376		38	10.10		
Licensed private asylums, London: Six for paupers and others, thirty-six for others only.	1833—1839	6	3572 3249	763.5 848.5	947 557	26.43 17.14	20.68 10.94	Paupers. Not paupers.
SCOTCH.								
Aberdeen	1830—1840	10	441	113.	102	23.13	9.05	
Glasgow	1814—1841	27	2490	120.3	278	11.16	8.55	
Dundee	1820—1840	20	812		90	11.08		
Perth	1827—1838	11	331	77.18	34	10.27	4.03	
Montrose	1824—1840	16		65.3	95		9.09	
IRISH.								
Armagh	1825—1840	15	1089	101.66	151	13.86	9.89	
Belfast	1829—1840	11	1013	147.	195	19.25	12.05	
Carlow	1831—1840	9	404	111.5	46	11.38	4.58	
Clonmell	1835—1840	5	291	77.	37	12.74	9.61	
Balinasloe	1833—1840	7	665	159.	149	22.40	13.38	
Cork	1833—1840	7	1534 $\frac{1}{2}$	373.25	314	20.47	12.00	† Under treatment.
Limerick	1827—1840	13	1325	210.33	200	15.09	7.31	
Maryborough	1833—1840	7	403	116.	64	15.88	7.84	
Richmond, Dublin	1831—1840	9	1016	277.33	214	21.06	8.54	
Waterford	1835—1840	5	278	91.5	17	6.30	3.71	
Londonderry	1829—1840	11	960	141.5	208	21.66	13.35	
Retreat, Dublin	1812—1840	28	89	13.28	21	23.59	5.64	
FRENCH.								
Salpêtrière and Bicêtre	1822—1834	12	10779		4945	45.87		
Salpêtrière	1801—1813	12	3806		1040	27.32		
Bicêtre	1784—1794	10	1405		685	48.75		
Charenton	1826—1833	7	1557	456.	546	35.06	14.96	
Esquirol's								
ITALIAN.								
Scnavra, Milan	1802—1827	25	6006	402.88	2580	42.95	25.61	
Aversa	1813—1833	20	3897		1222	31.35		
GERMAN.								
Schleswig	1820—1835	15	566	147.	104	18.37	4.71	
Siegburg	1825—1840	15	1129	145.	161	14.26	7.40	
DUTCH.								
Amsterdam.	1832—1837	5	255		55	21.56		

It will be perceived that the proportion of deaths in the British asylums is reckoned in two ways, one upon the whole number of admissions, the other upon the average number annually resident in each institution. The latter is the only method by which an approximation towards the desideratum of placing the several asylums upon an equality of condition can be effected. If the per cent. be calculated upon the number admitted, then in one asylum 500 incurable paupers may be admitted, and, being kept a series of years, more or less, all die, while in another, the same number of favourable cases, selected by the officers, are received, and unless cured within the first year, are all discharged, with the exception of a few, perhaps twenty-five, who have died. In these supposed cases, which are but exaggerations of reality, the former must report 100 per cent., and the latter but 5 per cent. of deaths. We have not the average numbers annually resident at the American asylums, and hence that method of comparison in regard to them, is impossible. By an inspection of the table, it will be perceived that the relative mortality at different institutions varies to a considerable extent. This might be expected, since all those causes which were heretofore mentioned as influencing the proportion of cures, are equally operative in augmenting or diminishing the proportion of deaths.

At the Bicêtre and the Salpêtrière the mortality was greater in winter than in any other season, but at the Worcester, Mass. Asylum, it was greatest in summer.

Causes of Death. Of 4886 deaths which occurred at Bicêtre and Salpêtrière, from 1822 to 1833, inclusive, the classes of disease fatal to life with the numbers who died of them, were as follows:

Organic disease of the brain and its meninges, - - - - -	1178
“ “ “ thoracic viscera, - - - - -	1451
Phlegmasiæ of the abdominal viscera, - - - - -	1629
Cachexiæ, - - - - -	495
Not stated, - - - - -	133

At the York Retreat during 44 years they were as follows:

Diseases of the brain and nervous system, - - - - -	27	Disease of the kidneys, - - - - -	1
“ “ organs of respiration, - - - - -	34	“ “ uterus, - - - - -	1
“ “ heart, - - - - -	9	“ of various seats, - - - - -	19
“ “ organs of digestion, - - - - -	20	“ epidemic or contagious, - - - - -	12
		Natural decay, or old age, - - - - -	11
		Suicide, - - - - -	5

Of those dying of diseases of the thorax and abdomen, undoubtedly many had a lesion of the brain causing insanity. In others, the thoracic or abdominal lesion may have acted on the brain, thus producing the mental affection. It is very common in cases of chronic insanity for the patient to emaciate, the appetite being poor or otherwise, for some time. Œdema of the extremities and sometimes of the face arises, supervened perhaps by a colliquative diarrhœa which resists all medication and terminates only with the extinction of life. Greding undoubtedly had reference to such cases when he remarked that 68 per cent. of the insane die of a “gradual wasting away.” At the

Worcester Asylum, of 102 deaths 24 are attributed to "marasmus." These, also, probably belonged to the class to which we have referred.

Since the foregoing article was written, some additional information upon the subjects therein discussed has come under our notice. Among the sources from which it was derived are the forty-sixth annual report of the Retreat, near York, England, for 1841-2; the Returns to Parliament of the condition of the District Asylums in Ireland for the year ending in 1841; and a valuable pamphlet "On the Statistics of English Lunatic Asylums and the reform of their public management, by William Farr." The article last mentioned was read before the Statistical Society of London, and, since its publication, has been highly commended in numerous journals and other periodicals in Great Britain. The attention devoted to the Statistics of Insanity in England, demonstrates a prevalent opinion there, that, how imperfect soever may be our data upon the subject, at present, still no inconsiderable amount of good may eventually accrue from pursuing it. The physicians of the public asylums in that country are about to introduce a uniform method of arranging and reporting the results obtained at their several institutions; a desideratum which it is earnestly to be hoped will ere long be effected in the United States.

At the York Retreat, during the year ending in 1842, there were but 18 patients admitted—9 men and 9 women. Nine were discharged, of whom but 3 were restored, 9 died, and at the close of the year 91 remained, of whom 39 were men and 52 women.

The results at the Irish asylums, for the year ending in 1841, and for the whole period since their establishment, are contained in the following table.

Asylums.	Admitted in 1840-1.	Discharged cured.	Died.	Admitted since established.	Cured.	Died.	Relapses.
Armagh	28	9	8	1115	502	157	23
Belfast	115	61	24	1128	554	219	86
Carlow	41	25	8	443	213	54	20
Clonmell	48	20	9	339	159	46	28
Connaught	135	58	31	800	283	180	61
Cork	242	142	52	2571	1345	499	115
Limerick	101	73	18	1426	764	218	14
Londonderry	89	50	25	1049	486	233	156
Maryborough	50	24	7	453	191	71	48
Richmond	46	27	19	1062	525	233	106
Waterford	28	16	3	306	107	20	3
Total,	923	508	204	10694	5129	1922	660

The observations of Dr. Haslam, at Bethlehem Hospital, during the ten years from 1784 to 1794, in reference to a point upon which there appears to be some difference of opinion,—that of the effect of age upon the curability of insanity,—are as follows.

Age.	Admissions.	Cures.	Per cent.
From 10 to 20 years.	113	78	69.
" 20 " 30 "	488	200	41.
" 30 " 40 "	527	180	34.
" 40 " 50 "	362	87	24.
" 50 " 60 "	143	25	17.
" 60 " 79 "	31	4	13.

According to these the cures regularly diminish in the ratio of 33 per cent. for every additional decennium of life.

In the subjoined table may be seen the proportion of relapses of patients treated in the English asylums.

Asylums.	Admitted.	Cured.	Readmitted.	Relapses to 100 admitted.	Relapses to 100 cured.
Hanwell	1142	222	41	3.6	18.5
Gloucester . . .	446	231	68	14.7	29.4
Other county asylums	3671	1977	623	17.	31.5
Total,	5259	2430	732	13.9	30.1

Thus, for every 100 admitted the first time, about 14 (13.9), were re-admitted, and for every 100 cured, 30.1 or nearly one-third relapsed.

For convenience in reference we shall close these addenda with an exposition of the present condition of the United States in regard to their institutions for the special treatment of the insane. There are now twenty public asylums in operation. These are arranged in the subjoined table according to the time at which they were opened for the reception of patients.

Asylums.	Where situated.	Opened.	Beds.	Farm.
State Lunatic Hospital	Williamsburg, Virginia	1773	130	20 acres.
Friends'	Frankford, Pa. . . .	1817	65	65 —
McLean	Charlestown, Mass. . .	1818	140	30 —
Bloomington . . .	Near New-York City . .	1821	140	50 —
Retreat	Hartford, Conn. . . .	1824	100	17 —
Kentucky State Hospital	Lexington	1825	130	18 —
South Carolina "	Columbia	1827	100	34 —
Western "	Staunton, Virginia . .	1828	140	65 —
Massachusetts "	Worcester	1833	232	80 —
Georgia "	Milledgeville			
Vermont "	Brattleborough	1836	130	50 —
Ohio "	Columbus	1838	140	57 —
New-York City "	Blackwell's Island . .	1839	300	
Boston "	South Boston, Mass. . .	1839	100	4 —
Maryland State . "	Baltimore	1839	150	10 —
Tennessee "	Nashville	1840		
Maine "	Augusta	1840	120	70 —
Pennsylvania Hospital	Near Philadelphia . .	1841	230	101 —
New-Hampshire State, do.	Concord	1842		
New-York " "	Utica	1843	300	

In Rhode Island the late Nicholas Brown, Esq., left a legacy of thirty thousand dollars to be devoted to the establishment of a lunatic asylum; but

as yet there has been no definite action towards the erection of a building. In Connecticut and New Jersey the subject of a State Asylum has been agitated, and in his message for last year, the governor of the latter state urged upon the legislature the importance of such an institution. In Pennsylvania, a State Asylum has been commenced near Gray's Ferry, in the vicinity of Philadelphia, but the work is now suspended. Of the twenty-six states composing the Union, there are still fourteen in which there is no hospital exclusively devoted to the treatment of the insane. The deficiency is glaring, and we trust will soon awaken the interest and energies of those by whom it may be supplied.

The cities of Philadelphia, Baltimore, Washington, and perhaps some others have departments for the insane paupers in their respective almshouses. A building connected with the Charity Hospital in New Orleans is also appropriated to lunatics. There are several private institutions in different sections of the country, of which that of Drs. G. and S. White, in Hudson, N. Y., is the largest, and one of the most ably conducted.

ART. XIII.—*Luxation of the Patella on its axis.* BY JOSEPH P. GAZZAM, M. D., of Pittsburg, Pa.

SEPT. 10th, 1842. This evening at 7 o'clock, James, aged 21 years, son of Judge Porter, of Pittsburg, was thrown while wrestling, and immediately found himself unable to rise.

On seeing him about an hour after the accident, I found the patella of the right leg dislocated on its axis, i. e. it was lying on its edge—presenting the posterior face outward, and the anterior face inward—the inner edge resting in the groove between the condyles of the femur.

Flexing the thigh on the pelvis and straightening the leg, I endeavoured to replace the bone by pressing its edges in opposite directions, but failing (after repeated trials) I requested that the patient should be brought to town, (the accident happened three miles out of the city,) and additional advice procured.

At about 12 o'clock the patient was brought to his father's house, where I met Dr. Addison. After repeated unsuccessful attempts at reduction, it was thought well to lessen the tension of the joint by dividing the ligament of the patella. This I did by introducing beneath the skin a narrow-bladed knife, and cutting the ligament close to the tubercle of the tibia. Again we attempted reduction but failed. The patella could be moved on its edge more freely than before the cutting, but resisted all our efforts to replace it.

Dr. Speer was now joined to the consultation, and in accordance with his suggestion the patient was placed erect, a vein opened, and the blood allowed

to flow until the approach of syncope, when the efforts at reduction were renewed—but although the patella could be moved on its edge, it could not be lifted out of the groove in which it rested. It was now agreed to let the patient rest for a few hours.

11th. At 8 A. M. the consultation was resumed, and it was now proposed to adopt with some modification the plan of Dr. John Watson, of New York, as detailed in the *N. Y. Journ. of Med. and Surg.* No. 2, and republished in the *Am. Jour. of Med. Sciences*, vol. 25, p. 252.

The thigh was strongly flexed on the pelvis and the heel elevated. Then the leg was flexed steadily and forcibly on the thigh and suddenly straightened. At the moment of straightening the leg I pressed very strongly against the lower edge of the patella from without, with the head of a door key well wrapped, while Dr. Addison pressed with both thumbs against the upper edge of the bone towards the external condyle. On the fourth trial this manœuvre succeeded, the bone springing into its place with a snap. A cushioned splint was placed behind the knee and secured by a bandage—an evaporating lotion was used, and the patient kept at rest. Recovery was uninterrupted, and the young man has now perfect command of the limb.

To the inexperienced it may seem that I have attached undue importance to this case by reporting it for the medical public; but I have no fear that those who have encountered such a case will think it altogether valueless.

PITTSBURG, Dec. 1842.

ART. XIV.—*Case of Salaam Convulsion, with Remarks.* BY EZRA P. BENNETT, M. D., of Danbury, Conn.

In the No. of this Journal for July, 1841, p. 187, I noticed the report of a case of that peculiar form of convulsive disease called Salaam convulsion, by Dr. West, of Tunbridge, England, and in the January No. for 1843, p. 243, another slight case by Dr. Barton, of Pennsylvania. Both these writers speak of the disease as being exceedingly rare, and both consider its pathology as entirely unknown. That it is a rare form of disease will be admitted by all. Seven cases only are to be found on record in all Europe. Four of these cases occurred in the practice of Sir Charles Clark; two in the practice of Dr. Locock, and one case only came under the observation of Sir Astley Cooper. No case so far as I can learn has been recorded in the United States, previous to Dr. Barton's, which was a very slight one, indeed barely sufficient to show the peculiar form of the disease.

The rarity of the disease; the obscurity of its pathology, and the disastrous results which have occurred in most of the cases reported, has induced

me to send you the following report, of a very severe and strongly marked case which occurred in my own family, together with my views of its pathology, and the course of treatment which ultimately proved entirely successful in subduing the disease and restoring the patient to sound health.

The subject of this case was my own child, a twin son of six years old. He is tall and slender, with a constitution decidedly scrofulous, but had always enjoyed good health previous to his attack; was always sprightly and active, but could not endure fatigue as well as his twin brother. In December, 1841, I observed him one day while apparently in good health, holding by the side of a door for support and acting as though his right leg was useless; I at first supposed him playing, but soon found the leg was entirely powerless, though retaining perfectly its sensibility. I took hold of his arm and supported him, but he could not stand upon or move the leg at all; he complained of no pain and in the course of a minute regained the use of the limb and returned to his play with his usual activity. These turns occurred once in a week or ten days for three or four weeks. While actively engaged in playing he would suddenly fall down and lie from thirty seconds to a minute without the least convulsion, and perfectly conscious; he would then jump up and away to his play as lively as ever. In January, 1842, the leg began to be convulsed; it would gradually contract until the leg and thigh became completely flexed; it then gave two or three convulsive twitches and became perfectly paralysed in regard to motion, for a minute or so, and then gradually regained its power, but not so suddenly as before. The attacks now also came on during sleep, and he complained of a sensation of falling out of bed. Previous to this I had done nothing for him. My first impression was that it was the result of an irritation in the first passages from worms or crudities, reflected upon the muscles of voluntary motion, through the medium of the spinal marrow, and I commenced my medication in accordance with these views. I gave calomel, pink root, sps. turpentine, &c. until I was fully satisfied that the fault was not in the stomach and bowels. By this time the affection had extended to the right arm, which was drawn up at the time in the same manner and with the same effect as the leg. I now turned my attention to the spinal marrow as the immediate seat of the disease, but after a most careful examination of the whole spinal column I could not detect the least tenderness in any part of it; yet so fully was I satisfied that the disease consisted in a sub-inflammatory state of the meninges of the spinal marrow, or roots of the nerves, that I laid a blister over the spine reaching from the occiput to the loins; as the blister began to irritate, the spasms were decidedly increased, which confirmed me in my views of the pathology of the case. After the first irritation of the blister had abated, the spasms abated, and in a few days he was well as usual.

After continuing well for about four weeks, he had a renewal of the disease, which now assumed a much graver form, and proceeded rapidly to complete development. He had at that time seven spasms in pretty quick succes-

sion; the spasms extended to the left leg, then to the left arm, and then to the head. The disease was now fully formed, and underwent no change until it was subdued, which was about the first of April. The leg and arm of the right side were in a tonic spasm; the left leg and arm in constant motion of flexion and extension; and his head in violent motion backward and forward as far as it could possibly go. The spasms were very violent and lasted from one to two or three minutes. He was perfectly conscious, and would answer any question put to him, although it evidently hurt him to speak, as there was some spasm about the muscles of the throat and mouth. In consequence of the good effects of blistering in the first attack, I again returned to their use, but as the lower limbs appeared to be the first attacked I applied them to the lower part of the spine; I repeated them again and again, but they did no good; I leeches him at the base of the occiput, gave him blue pill and ext. hyoseyamus, opium, &c.; but the disease increased most fearfully, and he soon had as many as fifty convulsions in a night. He could not be left alone a moment, as it was necessary for at least two persons to stand by him, to hold his limbs, but more particularly his head. He was perfectly aware of their approach, and would speak to those with him to hold his head. The paroxysms were now productive of severe pain while they lasted, and from their frequent recurrence kept him paralysed, so that he could use his limbs but very little; he was almost entirely deprived of sleep and was fast declining in every respect.

I now called in Dr. Comstock, an aged and respectable practitioner, who had been long engaged in practice, but he said he had never seen a similar case. He was of opinion that the disease was in the brain and would ultimately prove fatal. I consulted by letter, Professor Ives, of New Haven: he wrote me he had never seen a similar case. He recommended pellitory, assafoetida, &c., which I tried without the least effect; I now tried warm bath, empl. stramonium to spine, with cordials; all did no good, and I sent to New Haven for Professor Tully. Before he arrived my son became so much worse that I resolved to try opium in large doses, to procure if possible a little respite from his sufferings; I gave him almost two grains of opium every two hours for ten or twelve hours; he then became quiet and slept two hours.

During this period of quietude Dr. Tully arrived; soon after his arrival the spasms returned with as much violence as ever. Doctor Tully said he had never seen a parallel case, but he coincided with me in regard to the seat of the disease, and recommended a continuance of the opium in sufficient doses to quiet the spasms. It was accordingly continued through the night in large doses, and he slept about four hours, but the next day they resumed their former violence, and as he was evidently suffering from the effects of the narcotic I discontinued its use. By the advice of Dr. Tully, I now gave him the $\frac{1}{20}$ th of a grain of strychnine, and I am quite sure that if I had repeated the dose it would have destroyed him. It brought on a complete tetanic state of the whole body, which was truly awful, and from which he suffered most

cruelly. I immediately gave him some ipecac, which soon produced vomiting and relieved him of the tetanic symptoms, but left him very much prostrated.

Although he had been extensively and repeatedly blistered, as every thing else had failed to relieve him I resolved once more to resort to that remedy as a last effort, promising myself that if it failed I would desist and leave the case at least for a time to nature; I therefore spread two blisters each twelve inches long, and placed one on each side of the spine from the base of the skull downward. He suffered very much during the time the blisters were drawing, but as soon as the vesication was complete the spasms began to abate in violence and frequency, and in the course of a week left him entirely, and have never returned. He regained his health rapidly, and has enjoyed good health ever since. Counter-irritation I am satisfied was the principal agent in subduing his disease; and if I had in the second attack, as in the first, applied it to the upper instead of the lower portion of the spine, I am satisfied that he would have recovered much sooner. The fact was I blistered below the seat of the disease, and of course did no good.

Remarks. This peculiar form of convulsion I believe always depends upon irritation of the spinal marrow either direct or indirect. In the case of my son the irritation was direct, and depended upon a sub-inflammatory condition of the meninges of the medulla or roots of the nerves. In Dr. Barton's case the irritation was indirect, and reflected from the stomach and bowels in consequence of an irritation produced there from acrid ingesta, as the result of the treatment most conclusively proves.

The treatment of this disease, when it depends upon worms or other irritating substances in the first passages, is of course very simple. If there is reason to suspect worms a strong decoction of pink-root, followed in an hour or two with a table-spoonful of castor oil and a tea-spoonful of spirits turpentine, is the most certain vermifuge I have ever tried. If upon other derangements of the stomach and bowels, the appropriate remedies will suggest themselves to any judicious physician. When it depends upon a primary affection of the medulla spinalis the treatment is more complicated and difficult; a variety of modifying circumstances will of course vary the treatment in different cases. After due attention has been paid to the state of the stomach and bowels I consider counter-irritation of the first importance; I prefer blisters to all other modes of counter-irritation; I would also use alteratives, particularly the protoiodide of mercury combined with extract of conium or hyoscyamus especially if there was a scrofulous condition of the system. The other preparations of iodine may also be advantageously employed, as the hydriodate of potassium, or if there is much debility iodide of iron. I do not pretend to lay down a course of treatment from observations drawn from a single case; I have only thrown out a few suggestions, thinking that they might possibly be of some use to those who may hereafter be called to treat this novel affection.

ART. XV.—*Case of Medullary Sarcoma of the Labia, and other cases of Malignant Disease, with Remarks.* By A. B. SHIPMAN, M. D. of Cortlandville, New York.

MRS. Powers, of Dryden, Tompkins Co., N. Y., ætat. 41, of a thin spare habit, pale dingy complexion and nervous temperament, mother of six children, and had enjoyed tolerable health until within three years, when she first discovered a small tumour not larger than a chestnut on the upper part of the right *labium pudendi*. It was free from pain and uneasiness and movable under the skin. It continued gradually to enlarge involving the whole labium, when she thinks the tumour was as large as a hen's-egg; still no pain or uneasiness was experienced. I saw her in company with Drs. Bronson and Green, March 17th, 1838. About four and a half months previous the catamenia ceased, when the tumour rapidly increased in size, was attended with sharp lancinating pains, great heat and bearing down; the inguinal glands on both sides also began to enlarge at the same time. At the time of our visit the tumour was the size of a large cocoa-nut of a pyramidal shape, and very much resembling in shape and feel an enlarged testis of a knotty, uneven surface, very hard and heavy. A chain of enlarged lymphatic glands could be traced into the inguinal ring of each side, very tender and much inflamed. She could not stand erect as the pain in the tumour was very severe, giving her a sensation as if about to burst. There was much constitutional irritation, loss of appetite, furred tongue and a frequent pulse. I did not think it advisable to remove the tumour by an operation as the patient desired, as our impressions were at the time that it was of a scirrhus nature, and that some of the enlarged glands were beyond the reach of the knife, and that whatever course was adopted a fatal termination was sure to ensue. To soothe the patient, however, we placed her on a mild antiphlogistic course, with cold applications to the tumour and an occasional anodyne. On the 26th of March, nine days after, the patient sent for me again. She had felt motion a day or two before, and was confident she was pregnant. This gave her much uneasiness, she being certain that a child could not be born while the tumour remained in its present state. She, therefore, implored me to operate; although I assured her that no reasonable prospect of success could ultimately be expected. The constitutional disturbance was less than on the 17th. The operation was at length performed, with the assistance of Drs. Bronson and Green. An incision, commencing at the lower part of the tumour and carried upwards towards the abdominal ring, six inches in length, was made through the skin and condensed cellular tissue, and the tumour soon dissected away. There was but a trifling hemorrhage; an artery only requiring a ligature. On cutting through the tumour after its removal its true character was at once obvious. It was lobulated and cellular, and connected together

by strong fibrous bands. Some of the cells were filled with soft medullary matter, much resembling the substance of the brain, while others were of a melanose description of various degrees of consistency, from that of a fluid to that of coagulated blood. No doubt existed now that the disease was of a malignant fungoid nature, and the prognosis fatal. The removal of the diseased glands was therefore deemed useless, if not impracticable, as many of them could be traced into the abdominal ring. The patient bore the operation with great fortitude. The wound was brought together with sutures and adhesive plaster. The wound healed in a few days, and the patient was comfortable and free from pain and fever, her appetite improved and she gained strength.

June 7th. She gave birth to a dead fœtus, being in the seventh month of gestation. For the first two weeks she was easy, and free from fever, but the tumours now began to enlarge rapidly; they sprung up from all the lower part of the abdomen in large irregular masses attended with acute pain, and high constitutional excitement. In a short time the most prominent parts of two or three of the tumours burst, and a fungus shot forth attended with hemorrhage, and a sanious discharge of most intolerable odour. She lived until the eighteenth of August, worn out with pain, sleepless nights and wretched days, emaciated to a skeleton.

REMARKS.—The diagnostic marks in this case were not as clear as in most cases of fungus hæmatodes. The tumour had a hard, solid, unyielding feel, like scirrhus, and the pains were sharp and lancinating. The occurrence of pregnancy, it would appear, caused a rapid development, for previous to that it had remained nearly stationary for more than three years. I have witnessed within the last two years two cases of scirrhus mamma, where pregnancy was followed by a rapid increase in the pain and sufferings of the patients. I amputated the breast in each of them at the earnest request of the patients and their friends. In both of them their sufferings were mitigated. Each gave birth to a living child; but the disease attacked some internal organ, and proved fatal in the end. In all these three cases the operation appears not to have disturbed the process of gestation in the least.

The first case of *fungus hæmatodes* which occurred to me, was in an old gentleman of 70 years of age, several years ago. The tumour was situated on the inside of his thigh and near the groin, and had been forming three years. It was as large as a man's head, and from the top a bleeding fungus protruded, and a pungent fetid odour escaped, so penetrating and sharp as to make the nostrils tingle. The man stated that twenty years previous he had a fungous tumour on his great toe of the same side, which bled profusely, but a surgeon extirpated it with the knife, and rubbed caustic over it, and it was cured. From that time until the first appearance of the tumour on the thigh, he enjoyed good health. The tumour on the thigh was at first elastic and spongy to the feel, and was not attended with any pain. The man, it is unnecessary to state, died, exhausted from the profuse hemorrhages and sanious discharges.

The second case was that of a gentleman about 38, whose testicle began to enlarge, and continued until it attained the size of a coffee cup. It was hard, knotty and irregular, and attended with lancinating pains. The superficial inguinal glands were enlarged, and his general health poor; his complexion of a dirty sallow hue. The testicle and enlarged glands were extirpated, but he died in a few days; the mesenteric glands were diseased, and the abdominal viscera thickly studded with malignant tumours, containing medullary matter. The extirpated testis, when dissected, presented nearly the same appearance as the tumour in the case of Mrs. Powers.

The third case was that of a young lady, ætat. 14, who had a tumour on the upper part of the arm, commencing near the insertion of the deltoid muscle, and extending towards the shoulder joint, and down the arm to near the elbow. It appeared to involve all the tissues, and the arm was enlarged to a great size. It resembled *osteo sarcoma*, and was so believed to be by a great many physicians. After existing many months, and her general health becoming seriously impaired, amputation at the shoulder joint was recommended, and a day appointed for its performance. In the mean time a quack saw it and promised a cure. The patient placed herself under his care, and in a few weeks a large bleeding fungus shot forth from the arm, and she sunk under the discharge, and the pain and irritation in a few more weeks. This was no doubt a case of *fungus hæmatodes*.

A young lady, ætat. 17, requested my advice in 1840, respecting an enlargement of her thumb, fore and middle fingers of the left hand. She stated that the ends of them began to enlarge, and continued so for six months past, when they threw out a fungus from each, which bled profusely. The hand and fingers were œdematous and useless. It was attended with little or no pain, and scarcely any inflammation. She had also a tumour in the left side in the region of the spleen, as large in circumference as a saucer and two inches in diameter, of an elastic feel, free from pain and uneasiness, and of four months duration, and rapidly growing. Her general health was poor. She was of a sallow chlorotic countenance, and her limbs œdematous. My prognosis was of course a grave one; but being unwilling to distress the young lady with an expression of my opinion, I prescribed the iodide of iron with laxatives, and had the satisfaction in a few weeks of observing a manifest improvement in the general health, and the local disease. The disease of the fingers got entirely well, and the tumour in the side has nearly disappeared, while her general health is quite restored. I have related this case to show how close a resemblance scrofula will sometimes present to disease of a malignant character.

Nov. 1, 1841. Was called to see Mrs. Powers, of Summer Hill, Cayuga Co., in consultation with Dr. Cooke. She was the mother of eight children, age between 60 and 65; had enjoyed good health until within three years, when she was attacked with pain in the right side, which was very severe, and was diffused over the abdomen. It disappeared on the operation of a

cathartic; from this time the attacks became frequent, and were of longer duration, and the countenance became tinged of a deep saffron hue. In the spring of 1841, she had a more severe attack than usual, and soon after she perceived a tumour in the right side; from this time sharp lancinating pains were constantly felt in it. The tumour at the time I saw it extended from the crest of the ilium to the ribs, where it could be felt passing upwards beneath them. Its limits to the left were a little beyond the umbilicus; its middle was prominent, hard and knotty, and rather tender. The countenance is pale, sallow and dejected; she has slight chills every second day with extreme restlessness and fever; tongue furred; loss of appetite, with irregular bowels; pulse quick and weak; urine scanty; high coloured, and deposits a brickdust sediment; skin dry; mind gloomy; emaciation is rapidly going on. She continued to sink, and died in the month of February, 1842. Dr. Cooke made a hasty *post-mortem* examination, and found the tumour to consist of the liver enlarged to an enormous size, of a scirrhus hardness, and filled with cells containing soft medullary matter.

ART. XVI.—*Incontinence of Urine, successfully treated by Nitrate of Potash.*
By J. YOUNG, M. D., of Chester, Delaware County.

ENEURESIS is so disagreeable and loathsome a disease, and frequently so difficult to manage, that the following cases, with their treatment, may not be devoid of interest to a portion of the practitioners of our art; inasmuch as the article used, it is believed, is not to be found among the means generally recommended by authors for that purpose.

In the winter of 1828, I was requested by my friend Doctor R. C. Marsh, one of our oldest, most intelligent, and most experienced practitioners, to take charge during his absence, of a highly respectable lady about 50 years of age suffering from incontinence of urine. He informed me that all the means that are usually prescribed had been used in this case, and had failed; that he had been trying for more than a week, the tinct. lyttæ of the pharmacopœia, and he now had prepared a saturated tinct. which he proposed using, and to which I at once agreed.

The perineum was then sore with a blister, and the saturated tincture was given in rapidly increased doses, until a teaspoonful three times a day was given. It produced no effect whatever; but on the 4th day of its use, I found her affected with a tolerably violent catarrh, with cough, coryza, considerable fever, an irritable pulse, and an exceedingly irritable state of system. There was no change in the eneuresis.

Deeming it improper to continue the course agreed on with Dr. M. under this new state of things, the tincture was discontinued, with the intention of

resuming it again as soon as the catarrhal affection had subsided. A saline cathartic with demulcent drinks, bathing the feet at night, and a dose of pæregoric at bed-time, were recommended. This was *February 5th*, 1828.

7th. I saw her again, found her much relieved of the catarrhal symptoms; there is still, however, some feverishness and irritability, without the least improvement in the original complaint. Directed nitrous powders, 10 grains every three hours, and continue demulcent drinks.

9th. She is entirely relieved, not only of the catarrh, *but also of the enuresis*. She was as much rejoiced at this result as I was surprised. She said, that after taking a few doses of the powders on the day they were first used, the incontinence ceased and has not yet returned. I ordered a gradual withdrawal of the medicine, and did not see her again, as the period of Dr. M.'s absence was about expiring, and he would again pay such attention as the case might require. I subsequently learned that it did not return, and that the cure was complete.

This was the first case of the kind I had ever seen, and its accidental cure made an impression on my mind that has been of advantage since, in the treatment of similar cases. It is, fortunately, not very common, in country practice at least, as I have met with but five cases of it since; three females and two males. The first, and only prescription used in each case, was *ten grains* of pulverized nitre every three or four hours with flaxseed tea to drink, and they have all yielded within 24 hours of commencing treatment.

Supposing that the same treatment might be serviceable in congenital incontinence, or where children from five years old and upwards wet the bed, I have tried it in one case, and with complete success. A boy between nine and ten years of age, who rarely in his life had escaped wetting the bed one or more nights in the week, was ordered 10 grains nitre three times a day for a week; during this time he escaped his filthy practice; it was omitted three days, and then ordered to be given four days in the week, omitting it three. It was thus continued five weeks, when it was entirely discontinued, he not having wet the bed since he commenced taking the nitre; nor did it return so long as he was under my notice, more than a year after. I have had no opportunity of trying it in any case since, but should any occur in future I shall certainly give it a fair trial.

I have supposed that the *modus operandi* of the nitre in these cases may be, by increasing the irritating properties of the urine, thus making it more stimulating to the bladder or its sphincter. If so, other preparations of potash or soda may be found serviceable in cases in which the nitrate may not succeed, and it thus opens a field of new resources from which we may bring relief, which could scarcely be found otherwise, to some persons suffering under one of the most disagreeable diseases human nature is subject to.

Perhaps, the mode of treatment here used may be an old one; but if so, I know not where to find it recommended,—certainly not in any of the authors that have fallen in my way.

CHESTER, Del. Co., Nov. 29th, 1842.

R E V I E W S.

ART. XVII.—*Notes and Observations on the Ionian Islands and Malta: With some remarks on Constantinople and Turkey, and on the System of Quarantine as at present conducted.* BY JOHN DAVY, M.D., F. R. SS. L. & E. Inspector-General of Army Hospitals, L. R. London: 2 vols. 8vo., pp. 936.

IT is well remarked by Dr. Davy, that amongst the advantages enjoyed by the medical officers of the army, "the opportunity which the service affords of visiting distant countries may justly be ranked as one of the most considerable, combining the pleasure and profit of travel with professional duties and culture, so that individuals, if intent on self-improvement, may derive at the same time a double benefit." That this advantage has been turned to good account by our author, is sufficiently obvious in the two volumes before us, not to speak of his other labours, in all of which we discover that philosophic acumen which distinguished his illustrious brother, Sir Humphry. But it too often happens that medical officers, employed in the extensive British colonies,—a remark equally applicable to our own, serving upon an almost endless frontier,—feel themselves under no obligation to contribute, according to their peculiar advantages and abilities, to the general stock of knowledge.

"If medical officers," says Dr. Davy, "considered it a duty which they owe to the public to communicate such information, as they may have it in their power to collect, relative to the countries in which they have been stationed, how many doubtful points would have been cleared up,—how many errors corrected,—how much more perfect would the histories of those countries have been rendered."

Influenced by views of this kind, our author was induced to embody the notes and observations made during a period of eleven years, (from 1824 to 1835,) that he was employed on the medical staff of the army in the Mediterranean. Besides, he has since been sent by Her Majesty's Government to Constantinople, for the purpose of aiding in the formation of a medical department for the Turkish army, and in the organization of their military hospitals.

As we design in this review to confine our remarks to such parts of the work as pertain strictly to medical science, the portion to be brought under notice is comparatively limited. The first volume, notwithstanding its high interest to the general reader, we are consequently obliged to pass by with scarce a comment. It treats of the history, geology, mineralogy, climate, soil, agriculture, horticulture, etc. both of the Ionian Islands and of Malta, and also of the temperature of the Mediterranean sea, and of the specific gravity of its waters.

As the topography of a country, in a medical point of view, is, however, of indispensable importance, we will here present, in the words of Dr. Davy, a description of the general features of Malta and the Ionian

islands, which might be expected, on account of their proximity in the same sea, to exhibit a very similar physical character.

"Although their solid geological structure and the incumbent soils are very analogous, yet the aspects presented in their scenery are very different as are also their productions. The Ionian Islands generally, are distinguished for beauty of landscape, for luxuriancy of vegetation. Malta is remarkable for apparent nakedness of surface, and an almost total absence of those features which constitute beauty. Where cultivation is neglected in the one,—the myrtle, the arbutus, the ilex, the cypress, commonly spring up, especially where most conspicuous, in the low grounds near the shore; whilst, in the other, similarly circumstanced, in the place of such a rich and beautiful shrubbery, will be found only low plants, such as can exist in a shallow soil capable of bearing long continued drought, amongst which the thistle may be mentioned as most conspicuous. Nor are the products of cultivation, (confining the attention to the more prominent, and, as it were, the staples,) less strongly marked: these in Malta are chiefly annual crops, principally of grain and cotton; whilst in the Ionian Islands, they are principally the olive and the vine,—one perdurable, the other of great durability."—*Vol. 1, p. 18.*

We cannot, however, refrain from here introducing a concise account of the Sirocco, concerning which very contradictory descriptions are to be found in authors. This wind, which has always been a subject of much interest to the medical philosopher, has been described by some as excessively damp, and by others as extremely dry. There are not wanting even descriptions representing it as both damp and dry, or that it possesses no peculiar qualities. This discordancy is attributable, no doubt, to partial and superficial observation, inferences having been drawn from exceptions in particular locations; but to the widely extended observations made by Dr. Davy, this objection of hasty generalization finds no application.

"The Sirocco wind," he says, "in Malta, and it may be added, in the Mediterranean generally, as well as in the Ionian Islands, is invariably charged with moisture, and even more so in summer than in winter. When it blows with any strength, the difference between a moist thermometer and a dry one exposed to it, seldom exceeds 4° or 5° ." [We may here add, by way of contrast, that the south-west winds, in summer, have often an extraordinarily low dew-point. "I have witnessed with these winds," says Dr. D., "a temperature so high as 105° , and a degree of dryness so great that a moist thermometer exposed to the wind, fell from 105° to 73° , and on another occasion, from 101° to 69° ,—a difference of 32° ."] "Its temperature is never very high, even in the height of the hot season. I have never seen it raise the thermometer above 86° . The atmosphere, when this wind prevails, is always hazy, as if palpable vapour were suspended in it. Dust is raised by it in a remarkable manner, and carried along with it.* The sensations which it produces at different seasons are far from being the same. In winter, when its temperature may be about 60° , it feels mild and agreeable. In spring and early summer, when its temperature may be about 70° , it is not generally unpleasant. It is chiefly in summer and autumn that it is disagreeably felt and complained of, when its temperature ranges between 75° and 85° . The higher its temperature, so much the more distressing are its effects, owing to the little evaporation which it produces. This is connected with its comparative humidity; and this, its humidity is, I believe, the principal cause of all its peculiarities,—of the oppressive sensation of heat,—of the perspiration in which the skin is bathed,—of its relaxing and debilitating effects on the body, and its lowering and dispiriting effects on the mind. Other effects, too, which are unquestionable, may be referred to the same quality,—as its retarding the drying of paint,†—the promoting the decomposition of animal and vegetable

* "Perhaps in consequence of the specific gravity of the dust being diminished by the absorption of moisture."

† "Its bad effects, in connection with the operation of house-painting, appear to be

matter,—the rusting of metals,—the fermentation of wines, and the acetous fermentation,—to which may be added the propagation of odours.”—P. 268.*

We are not disposed from previous knowledge to agree with our author, that the effects produced on the animal system by the Sirocco, are attributable to moist air alone. But more of this anon. Some of the effects ascribed to the Sirocco are believed by Dr. Davy to be imaginary; such as interfering, so as to render them inert, with the operations of vaccination and of inoculation for smallpox. This opinion, however, was adopted by Dr. Hennen, who says “that wounds and ulcers, and the discharge from mucous surfaces, generally deteriorate during the prevalence of a Sirocco.” Nor does Dr. Davy believe that sound wines, if bottled during a Sirocco, will not keep.

“The beneficial effects of this wind,” continues our author, “which have generally been less dwelt on, and are less commonly known, than its disagreeable ones, are dependent, I believe, chiefly on the same quality of humidity,—as its promoting vegetation, by preventing the parching of the soil,—its favouring the corn-harvest, by preventing the sudden drying of the ear, and the falling out and loss of the grain,—and its favouring the olive-crop in ripening, by preventing the olives from becoming shrivelled on the trees. In the month of May, the period of corn-harvest in Malta, a hot and parching south-west wind is as much dreaded by the natives as a cold and parching north-east wind is feared in Corfu, in February, the time of the olive-crop. A good word, too, is sometimes spoken of this wind by sportsmen, on account of the flights of quail which it brings in; and occasionally, also, by invalids, such as happen to like a warm moist atmosphere and muzzy weather; and occasionally, too, by young ladies, performers on the guitar, the sounds of which it softens and improves, by its relaxing effects on the chords. It is, perhaps, partly on this account as well as on account of the warmth of the Sirocco, that it is peculiarly influential in the Ionian Islands on the musical natives; when it blows, especially in winter and spring, serenading parties perambulate the streets, and the guitar, in accompaniment with the voice, is to be heard very commonly. Besides humidity, other causes have been supposed to exist, in connection with the Sirocco, to which its peculiarities have been attributed. Some have considered them owing to a peculiar electric state, and some to deficiency of oxygen. The experiments which I have made on it with much care, have not been favourable to either of these conclusions.”—P. 271.

From a series of experiments performed by Dr. Davy at Valetta, in 1835, relative to atmosperic electricity, “no well marked difference was perceptible in the electrical condition of the atmosphere, from whatever quarter the wind blew, under ordinary circumstances,—whether the clear north-east or north-west wind prevailed, or the hazy Sirocco, the electrical state of the atmosphere was found to be opposite to that of the earth,—the former negative, the latter positive.”—P. 272.

In another series of experiments, our author showed that there is no appreciable difference of specific gravity between the air of the moist

of two kinds—retarding the drying, and preventing the due adhering of the paint. The former may be from the little evaporation going on; the latter, from the humidity of the surface to which the paint is applied, and to the incorporation probably of moisture with the substance of the paint.”

* “Dr. Hennen, in his *Medical Topography of the Mediterranean*, in p. 32, noticing a similar effect of the easterly winds at Gibraltar, in connection with the sewers, which, with easterly winds, are peculiarly offensive, asks: ‘Is this the result of the humid atmosphere softening the soil of the sewers, and occasioning an increased exhalation?’ As moisture appears to be almost essential to the propagation or dispersion of odours, probably the effect in question is chiefly owing to the increased power of the air, as a carrier of odorous particles, in consequence of increase of humidity.”

Sirocco or any other wind; and as regards the different seasons the same negative result appeared.

"The necessary deduction from these negative results," he says, "is, that the ponderable elements of the Sirocco are nowise different from common atmospheric air, and *à fortiori*, that the proportion of oxygen is not less."—P. 273.

Dr. Davy does not believe that the Sirocco is impregnated with any subtle substance analogous to malaria, or any other having a specific effect injurious to the constitution. He thinks "that all the ordinary effects of the Sirocco may be referred to its humidity and comparatively high temperature combined." Did Dr. Davy's experiments on the electrical condition of the atmosphere not stare us in the face, we should say that he is in error in ascribing no influence to the low electric condition of this wind; for as it is in the negative state, and as we had supposed relatively low, we had always inferred that the animal frame is, by this means, robbed of its positive electricity, thus depressing the powers of life.

It is still a disputed point whether the Sirocco comes from Africa, or is air set in motion over the Mediterranean. We do not agree with our author that "the circumstance that this wind does not prevail in Africa, on the countries bordering on the Mediterranean, is in favour of the latter supposition;" for even a hot and dry current from the arid sands of Africa, in crossing the Mediterranean, may acquire a very high dew-point.

We have now reached the second volume, which is more rich in subjects purely medical, such as malaria, pulmonary consumption, smallpox, and observations on climate and quarantine.

The foundling hospitals in Corfu and Zante, it would seem, have been rather positive evils than useful institutions.

"All the infants brought and deposited in the revolving box for their reception," says Dr. D., "were taken in without inquiry. They were said to be of three classes: illegitimate offspring of clandestine amours, whose mothers were intent on hiding their disgrace; the offspring of women of the town, careless of their children, and considering them a burden; and thirdly, those of poor married women, who from their poverty had difficulty in rearing them, and who hoped, by collusion, to have them sent them to nurse. The mortality amongst these infants, forsaken by their parents, was appalling: in a paper before me, on the subject, it is stated that the deaths which took place amongst them in five years, ending the 1st May, 1835, amounted to seventy-five per cent. of those received; and that from the 31st of May 1835, to the 31st of October 1837, the number of deaths had been fifty, namely, twenty male infants and thirty females.* The writer of the paper in question, pointing out the bad effects of the old system, in relation to the cloak that it afforded to licentiousness and the deadening of moral principle and natural affection, and urging reform, powerfully combats the argument, that an alteration might lead to child-murder, by the remark, of the almost impossibility of the crime ever being so destructive of human life as the existing remedy."—P. 119.

The next subjects that come under notice are malaria and the fevers of the Ionian Islands and of Malta. Our author's conclusions are based chiefly on the British army statistics, which were fully reviewed in the number of this Journal for April 1841. Were it not for fevers of malarial

* "In Malta, the mortality in the foundling hospital, for many years, was as great, I believe, as in the Ionian Islands, so long as goats' milk was given to the infants. Before I left the island, a reform was attempted, nurses were provided, but not liberally, one nurse occasionally having had to suckle two children. Establishments of this kind seem to be doomed to mismanagement and abuse, as if labouring under a curse, and who shall say not merited, as in their general tendency likely to do much more evil than good."

origin, these islands would possess a degree of salubrity superior even to that of England and to most parts of Europe.

"The remittent fever of the Ionian Islands," says Dr. D., "appears to be of the same kind as the endemic remittent fever of the East and West Indies, of the tropics generally, and of the south of Europe, including the yellow fever of warm climates, which seems to be merely a variety of it."—P. 236.

It is scarcely necessary to refer to the fact that with us the profession generally do not, as regards yellow fever, coincide in this opinion. The mass of the profession look upon it as a disease *sui generis*,—as solely and essentially of endemic origin,—and as never contagious under ordinary circumstances of cleanliness and ventilation.

What is malaria? This is a question which has been often asked; and that it is still involved in impenetrable obscurity, is obvious from the circumstance that but few agree in any definition. Is it light carburetted hydrogen? is it sulphuretted hydrogen? is it simply aqueous vapour and a high temperature combined? is it merely the effects of vicissitudes of temperature upon the human frame? It seems easy to establish the negative of any one, or all of these positions; but to say what it is,—*hoc opus, hic labor est!* We seem to be, in fact, entirely ignorant, both of the nature of this agent and of its causes. In relation to its causes or sources, confining the attention to the Ionian Islands, our author arrives at the following *negative* conclusions:

"1st. That they are independent of luxuriant vegetation, which is proved by the instances of Meganisi, Cerigo, &c.

"2dly. That they are independent of the decomposition of vegetable matter, which is proved by the same islands, and by Paxo.

"3dly. That they are not constituted by the sun's rays acting on a moist surface nor on under-ground moisture, the power of the sun being much the same every year; the under-ground moisture being, in all the islands mentioned, very scanty, and, there is reason to believe, very little subject to variation of quantity from year to year; and farther, there being no constant relation between hot summers and rainy winters and malaria; or *vice versa*, which is a well established fact.

"*Lastly.* That they are independent of the mixing of fresh and salt water, and of the alternate inundation and exposure to the sun and air of muddy surfaces, there being hardly any appreciable tides in the Mediterranean, and the shores of the Ionian Islands being remarkably clean and free from mud."—P. 249.

These conclusions do not coincide with those drawn from the phenomena witnessed in our own country. As this subject has been quite fully investigated on the broad basis of the facts furnished by the medical statistics of the United States Army, we will here present the general conclusions which seem to be fairly warranted by these data. That heat is essentially connected with the production of malaria, is manifest from the fact, proved statistically, that in proportion as the equatorial regions are approached, do febrile endemics become more rife and malignant,—a remark which applies equally to the relative influence of the seasons as regards their temperature. But heat alone is not an adequate cause; for, in our southern regions, whilst the margins of streams, lakes, and marshes, are rife with malarial diseases, the adjacent sandy pine woods possess an exemption. Moreover, this connection between organic remains and what are termed malarial diseases, is further negatively established by the fact that, in surveying the topography of the United States, it is found that a like exemption pertains, even in regions decidedly malarial, to the military posts which have a dry and sandy soil. Thus, in the malarious region of

the great lakes, the posts having a dry and sandy soil, as forts Brady and Mackinac, are almost exempt from these diseases; and so upon the Atlantic Plain, Forts Monroe and Moultrie, each situated on a sandy tongue of the sea-coast, have a similar exemption. The same law, viz. that heat alone is not sufficient for the production of malaria, is well illustrated in the fact that the malarial diseases of the Nile never extend into the neighbouring desert. That moisture is also an essential ingredient among the combined causes productive of malaria, seems evident from the general fact that all those cities and military stations, which have proved, in every quarter of the world, the graves of unnumbered thousands, have occupied the banks or deltas of rivers in low flat countries. These two agents, heat and moisture, notwithstanding essential, are not, however, in themselves adequate causes; for vessels at a small distance from the land, in the rainy season of the hottest climate, will, if proper police regulations are maintained, continue healthy. It would seem then that heat and moisture, however essential, require the co-operation of other agents; and what these conditions are, at least so far as our own country is concerned, would seem to be plainly indicated in the remarks just made, viz. *a soil abounding in organic remains.*

We have now reached the portion of these interesting volumes, which treats of the climate of the Mediterranean in relation to pulmonary consumption. This is an inquiry of the highest importance, more especially as the researches of recent years tend to subvert long established opinions. We refer to the results afforded by the British army statistics, which warranted the opinion that it is worse than useless to visit southern regions in pulmonary diseases. Upon these data it was confidently announced that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in these affections; and in this sentiment most of the British journals accorded. Thus it was observed in an article in the "*Medico-Chirurgical Review*," that these reports "*have given the death-blow to the expatriation of invalids affected with pulmonary alterations.*" They serve also to show us the salubrity of our calumniated climate, and to lower our aspirations for that 'sweet south,' whose sunny skies and luxuriant plains too commonly smile but to betray. Statistics dispel those illusions of poesy, and even prove that consumption, the reproach of our fickle seasons, lurks as fatally in the balmy Italian zephyr, or the sultry tropical breeze."

It was in the articles by Dr. Forry, in this Journal* that these conclusions were, we believe, first combated. As the views of the author of the articles to which we refer have not been altogether fairly represented, in a cotemporary,† we may be allowed to quote here the concluding remarks of his review, of the Medical Army Statistics.

"It is thus seen," says Dr. F., "that the conclusion of the reporter, that the class of pulmonary diseases is more prevalent and fatal in southern than northern latitudes, is the result of hasty generalization, or rather that it has arisen

* Statistical Researches relative to the etiology of pulmonary and rheumatic diseases, illustrating the application of the laws of climate to the science of medicine; based on the records of the medical department and adjutant-general's office, by Samuel Forry, M. D., Medical Staff, U. S. A.; in the No. of this Journal for Jan. 1841.

Review of the medical statistics of the British Army by the same, in the No. of this Journal for April, 1841.

† British and Foreign Medical Review, April, 1842.

from a classification of climates on mere latitude without reference to the phenomena of temperature induced by local causes. Although the reporter has, in some measure, set the world right in regard to a *theoretical* error, he has unfortunately, at the same time, led it into a *practical* one. His first error was assuming the climate of England as the standard of comparison—the second, comparing the *lowest* average in one command with the *highest* in another—and the third, basing his deductions on the *annual* results without reference to the relative influence of the *seasons*. We have devoted the more attention to this subject in consideration of its importance to the pulmonary invalid, and from the conviction that the evil influence of false doctrines bears a direct ratio to the character of the authority whence it emanates.”

It is not a little gratifying to find that these views have since been fully sustained by such distinguished authorities as Sir James Clark and Dr. John Davy.

The first of these writers observes:

“The undue confidence, in the powers of climate as a remedy in consumption, which has so long prevailed in this country is now in danger of giving place to the opposite and equally erroneous extreme of total distrust. This is, chiefly, in consequence of the statistical reports on the health of our troops in almost all quarters of the globe, showing that there is no immunity from this disease in any climate.*** But as regards the influence of change of climate in the prevention and even cure of disease, *the information contained in these reports does not diminish our hopes of benefit from a temporary change of climate, or even from a more permanent residence when the climate suited to the individual case is selected, and all other necessary precautions adopted.**** I had the satisfaction to find that Dr. Davy's views, [having examined his work in manuscript,] regarding the Mediterranean climate are in perfect accordance with my own.”*

The conclusion at which Dr. Davy arrived from various statistical facts, and an ingenious train of reasoning upon the attending circumstances,—a knowledge the acquisition of which was especially favoured by his official situation in the Mediterranean,—is as follows:—

“As the statistical facts show that pulmonary complaints are more fatal amongst our troops serving at home than in the Mediterranean; and as all the circumstances, independent of climate, so far as I am acquainted with them, affecting the question appear to be in favour of the troops serving at home, especially the cavalry, I am not only *not able to adopt the opinion referred to, that the climate of the Mediterranean is more productive of diseases of the chest than our own climate, but am obliged to fall back on the old and hitherto generally received opinion of an opposite nature.*”—P. 293.

Did space permit us to follow Dr. Davy in his details, it would be easy to show that no reliance whatever is to be placed upon the deductions of Major Tulloch, the reporter of the British army statistics, in reference to the climate of the Mediterranean relative to pulmonary diseases. This subject, however, has been already presented to our readers in pretty full detail in Dr. Forry's articles adverted to above.

We will, however, notice this highly interesting and important question somewhat more at length.

In speaking of the comparative liability of the natives of these southern regions to pulmonary complaints, especially phthisis, Major Tulloch remarks:—“Nor is the fatal influence of diseases of the lungs [in Malta] confined to the troops alone; it extends, in a corresponding degree, to the

* The Sanative Influence of Climate, etc. By Sir James Clark, Bart., M. D. F. R. S., Physician in Ordinary to the Queen, and to the Prince Albert.

inhabitants." As deaths are reported by the Maltese medical practitioners under the different heads of consumption and phthisis pulmonalis, the former being restricted to cases of *marasmus*, the reporter of the British Army Statistics, by including all these cases under the same head, arrived at the most unwarranted results.

"From my professional knowledge of Malta and of all its medical concerns," says Dr. Davy, "I have no hesitation in saying, that in the statement I believe Major Tulloch has greatly overrated the proportion of deaths from pulmonary diseases. He has, do doubt, been misled by the term consumption: as used by the native practitioners, it was commonly employed to express *marasmus*, or wasting and loss of strength, without cough and other pectoral symptoms; and consequently the whole number, so returned, amounting to 2786, require to be deducted from the total, 6664, reducing it thereby to 3878, which, instead of being in the ratio of $5\frac{1}{2}$ per 1000, is a little less than 3 per 1000, namely, 298." P. 294.

As Dr. Davy was President of the medical committee of Malta, and thus superintended the medical concerns of the island, his attention was directed to the monthly returns of mortality; and seeing the misconception to which the term "consumption," in the sense used above, was liable, he substituted in 1831, the term "*marasmus*." Major Tulloch, however, is not content to include under the class of diseases of the lungs, the cases of *marasmus* reported as consumption prior to 1831, but he also takes those reported as *marasmus* subsequently to that period.

In order to give a correct idea of the fatality of pulmonary diseases in Malta, Dr. Davy formed a table based upon the new form of reporting diseases; and the result shows the entire fallacy of Major Tulloch's deductions upon this point.

"After giving the subject all the consideration in my power," he says, "the inference in relation to the native population appears to me unavoidable, that they suffer comparatively little from pulmonary diseases, and especially from pulmonary consumption, very much less than our troops in that island, and also than the civil population of Great Britain."—P. 300.

Now, Major Tulloch had arrived at the following erroneous conclusion:—"Here, then, we find that inflammatory affections of the lungs are nearly twice as prevalent in the Mediterranean as among the same number of troops in the United Kingdom, and that in the mild climate of Malta they are also twice as fatal."

These same objections, when urged by Dr. Forry, were met by a laboured attempt to invalidate them in a cotemporary journal,* but as the evidence of Dr. Davy settles the question, we shall not stop to point out the fallacies of the reasoning employed by the reviewer.

It may not be regarded, however, altogether irrelevant, to consider a little more fully the influence of climate on pulmonary diseases, in connection with the arguments adduced, in the Review in question, to invalidate Dr. Forry's conclusions, inasmuch as the subject is one of deep interest, and the journal alluded to one of some authority, and having some circulation in this country.

"One of the most important and perhaps the most startling of the deductions drawn from the Statistical Reports of the British Army," says the British reviewer, "was the greater frequency of phthisis pulmonalis in the tropical regions

* The British and Foreign Medical Review, April, 1842. Review of Dr. Forry's Statistical Researches, &c.

of the west, than in our own cold, variable, and much-abused climate, or even in the still more inclement regions of Canada. Now, on referring to the influence of climate on this disease in the United States army, as shown in Dr. Forry's abstract, results precisely similar are obtained."—P. 426.

There is perhaps no very striking difference as regards the prevalence of *tubercular* phthisis in any part of the United States. This affection of the lungs is no doubt much less under the influence of climatic causes than other forms of phthisis, as well as pleuritis, pneumonia, and catarrh. In Cowan's additions to Louis, on phthisis, it is asserted that, in England, "those who are *least* exposed to its influence, are precisely those *most* exposed to the vicissitudes of the climate." The agency of climate in the production of phthisis is no doubt secondary to the action of other causes, as, for example, occupation, food, and habits; and that the influence of this cause has been much exaggerated or much too exclusively considered, is further apparent from the fact, that the most variable climates are best adapted for the development of the various mental and bodily powers. In Laennec's work, edited by M. Andral, it is said that phthisis is much more frequent in the temperate regions of Europe, comprised between the 55th and the 45th degree of latitude, than it is further to the north; and this position is sustained by various comparisons. In Sweden, for example, the ratio of mortality caused by pulmonary phthisis is estimated at only 63 per 1000 deaths, whilst in London it is calculated to be not less than 236. Dr. Forry also maintains that, in the middle regions of the United States, characterized by great extremes in the seasons of summer and winter, pulmonary phthisis is most predominant, and that consequently a cold temperature is not essentially *per se* favourable to the development of phthisis pulmonalis, as well as pleuritis and pneumonia.

In respect to the deductions of the British army statistics relative to pulmonary diseases, Dr. Forry raised the objection that they were based upon the *annual* results without reference to the relative influence of the *seasons*. This was the true point at issue; but it was most carefully avoided by the writer in the "British and Foreign Medical Review," by whom the whole question was restricted to the annual results. Dr. Forry showed by tabular abstracts that pulmonary diseases, with the exception of catarrhal affections, presented a higher ratio in the middle division of the United States than either in the northern or southern; and the British reviewer, in order to be enabled to confirm the deduction of their own army statistics, viz., that pulmonary diseases are more prevalent in southern, than more northern regions, has altered the arrangement of Dr. Forry's tables; and by adding the middle division, which gives the highest ratios, with the southern, and then contrasting this average with that of the northern division, he triumphantly adduces the result as confirming that of the British army statistics!

Now, no one acquainted with the general laws of climate would, for a moment, think of classing our middle States among the mild climates of southern latitudes, since the parallels in Europe which yield the olive and the orange, are with us productive of ice and snow. The Delaware, which is in the latitude of Madrid and Naples, is generally frozen over five or six weeks each winter; and even the Potomac becomes so much obstructed by ice that all communication with the District of Columbia is thus suspended for weeks.

As regards the question of the relative influence of the seasons upon
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pulmonary diseases, it seems due to Dr. Forry to present his views in his own language:—

“That catarrhal diseases, for example, are much under the influence of season and climate, is proved by the following statistical results: Taking the average of the United States, the ratio of winter is two and a half times higher than that of summer, and the ratio of the class of posts in our northern regions, remote from large bodies of water, is nearly four times as high as in the peninsula of East Florida. In the former class is Fort Snelling, whose difference in the mean temperature of summer and winter is $56^{\circ}.60$, and in the latter is Key West with a difference of only $11^{\circ}.34$. Even on the same parallels, we find the most marked contrasts. Thus on the coast of New England, where the extremes of temperature are modified, the ratio of catarrhal affections is comparatively low; on the lakes, characterized by similar climatic features, the ratio is somewhat higher; whilst in the excessive climate, in the same latitude, in positions remote from the ocean or the lakes, it is more than twice as high. The connection of these facts with *chronic bronchitis* invests them with more than ordinary importance; for it is in that form of consumption which depends on chronic bronchial inflammation that we are justified in the expectation of deriving advantage from change of climate. Even admitting, with the reporter of the British statistics, that the ratio of pulmonary diseases is as high in southern, as in northern latitudes, it does not militate against the doctrine that benefit will be derived from change of climate in the way of a *winter* residence; for in northern climes, one great object of the pulmonic invalid is to avoid the abrupt transitions of the seasons from summer to winter. On the coast of New England, for instance, the ratio of catarrh per 1000 [men] is in the third quarter of the year 36 [cases], and in the fourth 85; and consequently the respiratory organs even when normal, are peculiarly susceptible, at this period, to morbid action; but if the pulmonic, at the approach of winter, seeks the climate of East Florida, he will find there, in the fourth quarter, a ratio even lower than that of the third quarter on the coast of New England.”

It thus appears that in regard to the climate of the United States, the rule holds good that wherever the seasons are violently contrasted the ratio of catarrhal diseases is highest, decreasing in proportion as the difference between the mean temperature of summer and winter grows less; and that they are less dependent upon daily variations of temperature, combined with moisture, than upon its extreme range as connected with the seasons, as is proved by the fact that the sea-coast and the lakes do not give, on the same parallels, a ratio more than half as high as the dry and cold atmosphere of the opposite localities. The same laws have been established in relation to pleuritis and pneumonia, and, in some measure, to phthisis pulmonalis. “In reference to the last,” says Dr. Forry, “it will suffice to say, that its ratio seems to have no direct relation with the other diseases of this class; for, although much under the influence of season and climate, yet it is still more under the control of other agents. Chronic bronchitis, it is very probable, acknowledges the general law, whilst the deviation is caused by cases of a tubercular nature.

One more example, and we have done with this vexed question. Another objection made by Dr. Forry, was that the reporter of the British Army Statistics had assumed England as the *standard of comparison*, by which to prove that the class of pulmonary diseases is more prevalent and fatal in southern than in northern latitudes. He consequently adopted a classification of climates based on mere latitude without reference to the phenomena of temperature arising from a modification of physical geography; and, in the present instance, from the circumstance that pulmonary

diseases, as a class, are peculiarly dependent on climatic characteristics, the impropriety of arranging climates by the mere test of latitudes is the more apparent. It is shown above, that catarrhal diseases, even on the *same* parallels, exhibit, in the more uniform climate of the lakes and the ocean, a ratio not more than half as high as in the opposite localities; and, consequently, as the range of the thermometer is not greater in England than in Italy, and as the difference between the mean temperature of summer and winter is actually less, a classification of climates based on mere latitude in reference to pulmonary diseases becomes an actual absurdity. So great is the influence of local causes upon temperature that at Edinburgh, Scotland, the difference between the mean temperature of winter and summer is only $17^{\circ}.90$, whilst on the same parallel at Moscow, Russia, it is $56^{\circ}.32$; and in North America, on a parallel 12° farther south, we find this difference between the two seasons to be, at Fort Snelling $56^{\circ}.60$, and at Fort Vancouver, about 1° farther north, on the western coast of America, seventy miles from the Pacific, only $23^{\circ}.67$. Hence, if we find, far north, a mild insular climate, like that of England, its ratios of pulmonary diseases do not give, we maintain, a fair expression of the general laws pertaining to that latitude, as determined by observations made upon the same parallels of widely expanded continents.

Objection was made to England, as a standard of comparison, on the ground that as its climatic laws constitute an exception to the general laws of temperature belonging to those parallels, it could not possibly be a fair test of the question whether pulmonary diseases are more prevalent than in a region ten degrees farther south upon the continent of Europe, inasmuch as it has actually a milder climate than the latter situation. London, for example, has a climate, as regards the difference in the temperature of the successive seasons, as mild as that of St. Augustine, in Florida, notwithstanding the latter is $21^{\circ}41'$ farther south—a remark that applies equally to Italy in an intermediate latitude. But this will be best represented in a tabular form, with the addition, by way of contrast, of a northern position in America.

	Lat.	Difference of the successive seasons.			
		Of winter and spring.	Of spring and summer.	Of summer and autumn.	Of autumn and winter.
London,	$51^{\circ} 31'$	$9^{\circ}.64$	$13^{\circ}.56$	$11^{\circ}.00$	$12^{\circ}.22$
St. Augustine,	$29^{\circ} 50'$	$9^{\circ}.29$	$10^{\circ}.80$	$9^{\circ}.79$	$10^{\circ}.30$
Italy,	$41^{\circ} 54'$	$11^{\circ}.53$	$16^{\circ}.03$	$11^{\circ}.33$	$16^{\circ}.70$
Fort Snelling, Iowa.	$44^{\circ} 53'$	$30^{\circ}.83$	$25^{\circ}.97$	$25^{\circ}.40$	$31^{\circ}.40$

In view of these facts, then, bearing also in mind that Fort Snelling, notwithstanding $6^{\circ} 38'$ farther south than London, has a difference of the successive seasons perhaps three times greater, it follows that mere latitude, taken as the basis of climate, cannot, as regards the influence of climate on pulmonary diseases, be a correct standard. But our reviewer, in the hope of maintaining the affirmative, resorted to the sophistry of adducing, in illustration, the instance of *fevers on the west coast of Africa*, where this class of diseases causes only the same extent of mortality among the native troops as among troops in England.

Now, there is not the least analogy between the two cases of pulmonary diseases and fevers, as applicable to the general principle. The question

at issue was the agency of atmospheric laws in the production of pulmonary diseases, which are considered its *chief* causes; whilst, in regard to the fevers of the west coast of Africa, these causes compared with others are very subordinate.

In fine, all Major Tulloch's "*new and startling*" deductions relative to pulmonary diseases must now be considered to have been reversed; and we are, in the language of Dr. Davy, "*obliged to fall back on the old and hitherto generally received opinions.*" We are wholly at a loss to perceive "*the interesting fact that, except the Ionian Islands, the liability of troops to consumption in the Mediterranean stations is even greater than in England;*" nor can we discover the "*striking contradiction to the popular idea,*" that it is "*by no means likely that any beneficial influence can be exerted by the climate itself*" in pulmonary diseases. To this it may be added that the more recent statistical reports of Major Tulloch "On the sickness, mortality and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," afford no evidence corroborative of the reporter's favourite opinion that pulmonary diseases increase in proportion as warmer latitudes are approached. We are told that "among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed *one per thousand* of the strength annually."

It now remains to notice three other subjects, viz: Dr. Davy's observations on quarantine, the smallpox of 1830-31 in Malta, and the climate of Constantinople in connection with kindred relations.

We deem it unnecessary to dwell upon the importance of the subject of quarantine, which, it is well known, exercises an influence of the most momentous character equally upon the general welfare and the interest of individuals. Its great object is ostensibly to afford protection from contagious and infectious diseases, but more especially the former; and hence its efforts, in the Mediterranean, are particularly directed against the importation of the plague, on the supposition that being purely contagious, it is propagated from one person to another in uninterrupted succession, without its ever arising *de novo*.

"To effect this object," says Dr. Davy, "various regulations have been enacted. Sanatory codes have been framed, founded on the above mentioned conclusion of propagation by contact; and, on the other conclusion, 1st, That certain articles are capable of receiving, and retaining, and conveying the contagious matter, and that certain other articles are destitute of the power—forming the two classes of substances, the susceptible and the non-susceptible; and 2dly, That the contagion can lie hid or dormant, in the living system, only a certain time.

"In carrying the system into effect, the necessity of it, for the preservation of life, having been considered absolutely necessary, the greatest rigour of forms has commonly been observed; no regard has been shown to personal liberty; no regard has been shown to property; no regard to the interests of commerce, or of international intercourse.

"When a country is proclaimed in quarantine, persons arriving from that country are taken into a lazaretto, are strictly guarded, and are subject to the punishment of death, if they leave their place of confinement before the expiration of the specified period. The ships are received into a quarantine harbour, or are surrounded by guard-boats; their cargoes are landed, and the articles variously treated; the susceptible articles are unpacked, and either exposed for a certain time to the air, or are subjected to fumigation.

"Such is a brief outline of the quarantine system, which, with various modi-

fications on the part of different governments, has been in activity in the Mediterranean, exclusive of the countries under Mohammedan rule, now upwards of four centuries.*

"Reflecting on the vast interest involved, especially in the commercial relations of nations, it were natural to infer that the subject, in its different branches, has been most deliberately considered, most carefully investigated by unbiassed and competent men, that nothing has been taken for granted, that facts have been diligently collected, evidence rigorously examined, and that the preceding conclusions, which constitute in principle the foundations of the quarantine system, have been proved to be true in a demonstrative manner, or as nearly so as the nature of the subject permits; and, consequently, that no serious objection can be made to the system,—that men's minds are at rest respecting it, and that all are reconciled to it, to its rigours, and to the annoyances and losses involved, from a firm conviction of its necessity.

"This is what might be expected; but how different is the reality. I believe it must be confessed that quite the reverse of all that has been supposed has taken place; that fear and panic have legislated, and not reason and judgment, and, consequently, that there has been no deliberate inquiry,—no examination of evidence,—no determination of facts,—and no establishment of principles from facts on the scientific inductive plan; and, therefore, as a further inevitable consequence, no confidence has been felt in the measures of quarantine amongst reflecting persons, and no satisfaction,—they have engendered doubts, and suspicions, and fears,—they have been viewed by many as irrational, arbitrary, and tyrannical."—P. 321.

To show that this is not an overcharged picture, Dr. Davy adduces the testimony of Dr. Bowring, whose observations were made when engaged by order of her Majesty's government, in instituting inquiries relative to the commerce of the East.

"The question," says Dr. Bowring, "is of consummate importance. The theory upon which quarantine regulations are founded, is, in its consequences, of such enormous cost, is creative of such innumerable vexations, impediments and miseries, that their infliction can only be justified or tolerated by a strong necessity,—a necessity founded on accurate observation, and sustained by undoubted and incontrovertible facts."

He proceeds—"When honoured by a mission from her Majesty's government to inquire into the present state and probable future development of our commercial relations in the East, my attention was naturally and necessarily called to those regulations which impede the free transit of merchants and merchandise, which levy enormous contributions upon commerce, which subject travellers to visitations and arrest, the most capricious and the most despotic, and which have created, in almost every state, tribunals holding unchecked and irresponsible authority over persons and property, exercising that authority in arbitrary waywardness, and allowing the sufferer no appeal against injury, no redress for wrong."

He adds—"The pecuniary cost may be estimated by millions of pounds sterling, in delays, demurrage, loss of interest, deterioration of merchandise, increased expenses, fluctuations of markets, and other calculable elements;† but the sacrifice of happiness, the weariness, the wasted time, the annoyance, the sufferings inflicted by quarantine legislation,—these admit of no calculation—they exceed all measure. Nothing but their being a security against danger the most alarming—nothing but their being undoubted protections for the public health, could warrant their infliction; and the result of my experience is not only that they are

* "In 1423, a lazaretto, to prevent the introduction of plague, was established in Venice."—*Darn.* ii. 318.

† "In his speech in the House of Commons, delivered on the 15th of March last, moving for further inquiry, so much wanted on the subject of quarantine, Dr. Bowring states that he believes that the losses from quarantine in the Mediterranean alone, are not less than two or three millions sterling a year."—*Hansard's Parl. Debates.*

useless for the ends they profess to accomplish, but that they are absolutely pernicious; that they increase the evils against which they are designed to guard, and add to the miseries which it is their avowed object to modify or remove."—P. 327.*

Dr. Davy, in consideration of the fact that the system of quarantine is deeply rooted in the fears and ignorance of the populace, and that governments have given very little attention to the subject, with a view to profit by honest inquiry, thinks that, notwithstanding the system will ultimately be either abolished or much modified, no material reform can soon be expected. He is ready, however, to contribute his mite towards the end proposed.

"Like Dr. Bowring," he says, "I can speak from what I have myself witnessed of the evils of the present system; and, like him, I have come to the conclusion, that the system, in a sanatory point of view, is entirely a failure. This opinion has not been hastily formed. I have come to it after a ten years' residence in the Mediterranean, after many voyages backwards and forwards, and to the adjoining countries, and after having been four different times in quarantine, and constantly in the habit of considering quarantine questions."—P. 329.

It is the fundamental parts of the existing system which are here alluded to by Dr. Davy. The first great question is—

"Is the oriental plague truly a contagious disease, incapable of arising *de novo*, capable of spreading only from individual to individual, by contact either directly of person, or through the medium of articles that have been touched by the diseased?"

The affirmative of this position, it is well known, is the prevailing opinion. It is the doctrine sanctioned by governments, and maintained by the severest legal penalties. The question cannot, at this time, be satisfactorily decided; but recently strong evidence has been published in opposition to the doctrine of contagion, especially by Drs. Bowring and Laidlaw. Dr. Davy says—"I am undecided." But, independent of the question of the contagious nature of plague, other great and fundamental ones, on the supposition that it is propagated by a peculiar matter generated by the disease, remain open for discussion. 1st. The time that the disease, subsequent to infection, can lie dormant in the system; and 2dly. The description of substances to which the matter of contagion can adhere, and by contact with which the disease can be communicated.

As regards the former question, its solution is probably involved in as much difficulty as the problem of the contagious nature of the disease itself; and concerning the second question, the susceptibility and non-susceptibility of certain substances to become the medium for conveying contagion, Dr. Davy thinks that the classification is equally arbitrary and erroneous.

"Cotton, wool, silk, flax, hemp, leather, are placed in the class of susceptible articles. Wood, metal, glass, are placed in the class of non-susceptible articles. Whilst you are detained in quarantine, you may deliver money to a person who comes to see you; you may drink out of the same glass; you may receive trays and baskets of provisions, and return them, with plates and glasses, without infraction of quarantine regulations—without bringing into quarantine the person into whose hands these articles have been placed. But should any one touch

* "Observations on the Oriental Plague, and on Quarantine as a means of arresting its progress, addressed to the British Association of Science, assembled at Newcastle, in August 1838." By John Bowring.

your glove or hat, or any part of your dress, or should you touch any part of his, he is immediately subject to quarantine of the same duration as yourself. Why such distinctions have been made, it is even difficult to conceive—they are so unscientific, so contrary to all the analogies of other contagious matters—and I may add, without exaggeration, so irrational. I have referred to authors for the grounds of the distinctions in vain; I have referred to living authorities, those conversant with plague and the quarantine regulations, equally in vain. I have been told by the latter, vaguely and generally, that common experience has proved that one class of articles are susceptible, and that those of the other class are not,—precise facts and data I have in vain asked for.”—P. 333.

We cannot, of course, follow our author in his ingenious arguments, showing the groundless distinction of articles into susceptible and non-susceptible; but, independent of this objection, he asks,

“Can lazarettoes be considered secure, and capable of insulating contagion, when, though surrounded by walls, they are open to the atmosphere, and more or less exposed to the winds? There is nothing to prevent light substances, as fibres of cotton, bits of paper, or feathers, from being blown from the enclosure of a lazaretto into the adjoining country or town.”—P. 343.

As contraband trade will continue despite the greatest vigilance and the severest penalties, the whole system of quarantine may, from this cause alone, be vitiated, and all its regulations rendered nugatory. Other diseases decidedly infectious and contagious, as smallpox, measles, and scarlet fever, are not excluded by means of quarantine. Do these arise *de novo*, or how are they introduced?

Quarantine establishments are considered by Dr. Bowring, in his able pamphlet already referred to, as “for the most part instruments, and terrible instruments, of diplomacy and state policy.” And Dr. Davy adds—“This, I believe, in too many instances, is unquestionably true.” Indeed, the inconsistencies of quarantine, as at present conducted in the different States of Europe, are so numerous that it were easy to fill a volume with striking examples.

“I have now gone over some of the grounds of objection to the quarantine system, as at present established. There would be no difficulty in stating others; as, I am confident, the more minutely the system is examined, the more faulty and objectionable it will be found to be, and fully warranting the conclusion of Dr. Bowring, already quoted, viz. ‘that the regulations of quarantine are not only useless for the ends they profess to accomplish, but are absolutely pernicious, increasing the evils against which they are designed to guard, and adding to the miseries which it is their avowed object to modify or remove.’”—P. 350.

Dr. Davy agrees cordially with Dr. Bowring in the paramount importance of sending a commission into the Levant, in order thoroughly to investigate the whole question. They think, indeed, that the leading commercial powers of Europe, as the sanitary legislation of England alone could scarcely be changed, ought to carry on a contemporaneous, if not a united, investigation; and thus the result, should the existing state of things not be justified, might lead to a revision of the laws of quarantine, friendly to all commercial relations, as well as to knowledge and human happiness.

Dr. Davy, in conclusion, adduces several examples, taking it for granted that the disease is contagious, illustrative of its slight degree of activity. The power possessed by merchandise and articles of dress, and furniture, &c., for retaining and conveying the contagion of plague, he believes to be very much over-estimated.

"Could articles of dress," he says, "retain the contagion of plague long, Constantinople, and indeed every Eastern town, ought never to be free from plague, as every one, I fancy, must be convinced who has ever walked through the old clothes bazaar of the city just mentioned, and witnessed the enormous quantities of articles of dress accumulated there, of all descriptions and conditions, and with the least possible attention to cleanliness, as the Turkish name of the quarter indicates."—P. 362.

Our author refers to an able report of Dr. Robertson, deputy inspector-general of hospitals, in which are brought forward many remarkable instances of escape from plague after communication with the infected. Here is one in the words of Dr. Robertson:

"The Mohammedan inhabitants, impatient of guardians being placed over the houses in which there were cases of plague, and also indignant that the bodies of the dead were taken into the lazaretto, to be buried with lime, assembled one day in great numbers, seized a body which was being conveyed to the lazaretto; and, to show their contempt for all sanitary regulations, embraced the dead body, and rubbed themselves with the coverings of it. The mob also dispersed all the guardians that were over the infected houses, and from that day (the 17th of May,) there was no longer even the semblance of quarantine in Beirut. I never heard, (Dr. Robertson adds, writing on the 26th July, when the plague was on the decline all over Syria,) that any of the persons concerned in this affair suffered in their health."—P. 358.

Dr. Davy, in fine, arrives at the following conclusion:

"Considerations arising out of the probable slight activity of the contagion of plague; the short time, it is probable, that it remains latent in the living system; the little aptitude that articles of merchandise, dress, and furniture seems to have to preserve the matter of contagion, are all in favour, I cannot but think, of the necessity of a revision of the laws of quarantine, with a fair prospect, as I have already observed, of their being greatly mitigated, and at the same time rendered efficient, to the great comfort of the traveller, the incalculable advantage of commerce, and the universal benefit of mankind."—P. 362.

We have entered more fully upon this subject, in consideration of the applicability of these observations as regards the yellow fever of our own country. We have already remarked that the great mass of the profession now look upon yellow fever as a disease *sui generis*, and not identical with remittent fever,—having an endemic origin, and being never contagious under the ordinary circumstances of cleanliness and ventilation. We may add that, at New Orleans, this fact is exemplified by nearly every year's experience. As this city occupies a position upon a mighty river's bank, formed of the alluvion of its own current, the local causes, notwithstanding it may be regarded as a healthy locality during nine months of the year, favour the development of this disease; and we find accordingly that as the summer temperature increases, yellow fever appears almost with the certainty of the varying seasons, and disappears as regularly when the scale of the thermometer indicates its decrease. At the former period, vessels laden with fugitives from pestilence ascend the stream by hundreds; but, notwithstanding the fatal *black vomit* appears on the decks as they pass along, the disease is never manifested among fellow passengers from *uninfected* regions; nor is it, under like circumstances, communicated to the inhabitants of the district to which they may fly. Are we not logically warranted then in the inference that it is a disease purely of season and locality?

The chapter on smallpox is a most valuable contribution to the statistics of this disease.

"From its first outbreak in March, 1830," says Dr. D., to its cessation in August, 1831, 8067 persons were attacked in Malta; and from its first appearance to its cessation, in the adjoining island of Gozo, between April of one year and May of the following, 2284 were attacked; of whom 1172 died in Malta, and 351 in Gozo, (making a total mortality of 1523 for the two islands,) which is the ratio of 1 in 6.8 of the number attacked in the former, and of 1 in 6.2 in the latter."—P. 370.

We shall notice merely the most important results of these statistics, furnished by the returns of the Lieutenant-Governor.

"The influence of age," says Dr. D., "is strongly marked in the numbers attacked, and how (taking the numbers as a criterion) the tendency to the disease diminishes with advancing age; and, what is very remarkable, how, after 28, almost a complete exemption appears to have been afforded. I regret that I cannot give the numbers attacked of different ages, from one year upwards; farther on, a return of deaths on this plan will be furnished, from which it may be inferred as probable that the diminution of tendency to contract the disease, at least after a certain period of life, is not in the exact ratio of augmentation of age.

"It is hardly necessary to point out that the strong disposition to infection in infancy, especially in the first year, is deserving of being impressed on the minds of parents; it may be brought forward as a powerful argument for early vaccination."—P. 379.

The influence of age on the mortality, especially of tender age, is, as might be anticipated, well marked.

"Whilst the general mortality, including all ages, has been 1 in 6.8 of those attacked, in infancy it has been in the proportion of 1 in 3.7; in the next period, viz. between 8 and 14 years, as 1 in 15.2; in the next, between 15 and 28, as 1 in 11.2; and in the last, those above 28 years of age, as 1 in 9.7."—P. 382.

From another table, under the head of vaccination, "it appears that the mortality amongst those not vaccinated was 1 in 4.7; amongst those supposed to have been vaccinated, 1 in 23.4; amongst the well vaccinated, 1 in 15.6; and lastly, amongst those attacked a second time by smallpox, 1 in 10.8.

"Why the proportion amongst the well vaccinated should be greater than amongst those supposed to have been vaccinated, I am not able to explain. Perhaps the apparent anomaly may be connected with the circumstance, that the majority of the former may have belonged to the infantile age.

"As regards the general effect of vaccination, in its influence both as affording protection from smallpox to a considerable extent, and mitigating its severity when not preventing the attack, the facts given are clear and satisfactory. It is a curious circumstance, that the proportion of those who died after a second attack of smallpox, was, as has been already pointed out, greater than in the instances of those who had the disease after vaccination."—P. 384.

A still stronger confirmation, however, of the beneficial effect of vaccination, was afforded by the comparative exemption of the British troops serving in Malta.

"The native population, in 1830, was estimated at 100,839 persons; amongst whom it appears, from preceding returns, 1 in every 12.1 was attacked with the disease, and 1 in every 85 died; but amongst the military, including their wives and children, the proportion attacked, as shown above, was 1 in 188, and the mortality was only 1 in 682."—P. 385.

As no precautions whatever were taken to prevent intercourse between the military and inhabitants, there being indeed continual communication between the families of each, the protecting and mitigating power of vaccination is the more remarkably demonstrated.

"Reasoning from the facts contained in the preceding returns, the influence of vaccination in preventing smallpox, appears to have been less than that of smallpox itself in preventing a second attack,—whilst the mitigating power of the former, compared with that of the latter, seems to have been greater: thus, of those attacked by smallpox, after having been vaccinated, as it was supposed, the mortality was only 4.2 per cent.; but amongst those who had the disease a second time, the mortality was as high as 9.3 per cent., a result which, I believe, is in accordance with common experience, if I may so express myself respecting an event, (a second attack of smallpox.) which is held to be a rare occurrence. The recurrence of the disease shows a peculiar susceptibility to it,—and on this ground, the severity of its effects have been attempted to be explained. But in such matters, I fear it must be confessed that explanation commonly is unsatisfactory, and that our knowledge is limited by the facts. An instance has been related to me of a lady, the mother of ten children, who had smallpox eleven different times; first in infancy, and subsequently on the occasion of each of her children having it, and, what is very remarkable, the latter attacks of the disease were not less severe than the first; no mitigating influence appeared to have been imparted to the constitution even by frequent repetitions of the specific morbid action peculiar to variola. This information I received from one of the sons of the lady,—an accurate observer himself, and a man of unquestionable veracity."—P. 386.

In this endemic, as in every other, some peculiarities were observed. A hemorrhagic tendency, as bleeding of the gums, bloody stools, and petechiæ, was prevalent in the worst cases, especially in the summer months. In these cases, death generally took place before the eighth day; and as it sometimes occurred without any other eruption appearing than the petechial, the disease might have been regarded as petechial fever.

There still remain two chapters of this highly interesting and instructive work, each of which pertains in some degree to medical science; but, in consideration of the space already devoted to these volumes, we feel obliged to be exceedingly brief. These chapters are entitled—"On the climate of Constantinople, and on some of the habits of the people in connection with climate and health," and—"Notice of some of the public institutions in Constantinople, in connection with the present state of Turkey."

"Lying nearly in the same latitude as Naples, situated on the shore of the sea of Marmora and the banks of the Bosphorus, at no considerable distance from the Mediterranean, and close to the Black Sea, it might be expected," says Dr. Davy, "that the climate of Constantinople would differ but little from that of southern Italy; that it would be characterized by hot summers and mild winters; and would be distinguished by equability of temperature. Such, however, is only very partially the case. Its summer season is commonly hot, but its winters are often irregularly severe and protracted."—P. 393.

The remark that the climate of Constantinople might be expected to differ but little from that of southern Italy, coming as it does, from as distinguished a philosophic traveller as Dr. Davy, surprises us not a little. As Europe is separated from the polar circle by an ocean, and is intersected by seas which temper the climate, moderating alike the excess of heat and cold, whilst Africa, like an immense furnace, distributes its heat towards the same region, its climate must surely be more mild and uniform than that of Constantinople, which has on its east and north an immense continent, both elevated and extending towards the poles,—causes which produce the extremes of atmospheric temperature.

"The circumstances most peculiar in the character of its climate (Constantinople)," says Dr. D., "are, irregularity—variability, the sudden changes of temperature, with changes of wind and weather to which it is liable, and the

wide range of the thermometer. * * A fall of snow is not considered remarkable in April; a shower of snow has suddenly masked the bright verdure of the early May; even in summer, the most equable season, the range of the thermometer is considerable, and the fluctuations of temperature are often great. In July last, it was often so low as 70° before sunrise, and as high as 90°, or above that, in the afternoon in the shade."—P. 395.

Whilst the variation of temperature of the Mediterranean, through the greater part of the year, very seldom exhibits a greater range than from 55° to 82°, at Constantinople, during two years' observations, the range extended from 24° to 91°. Such, however, was the climatic character of this region in the days of Ovid, who, lamenting in pathetic strains his banishment, takes notice of the freezing of the Euxine and of the congelation of wine in its vicinity:

Ipse videt certe glacie concrescere Pontum;

Ipse videt rigido stantia vina gelu.—Ex Ponto, lib. iv. Epist. 7.

As regards insanity among the Turks, Dr. Davy says that there exists very little tendency. Constantinople has only two receptacles for lunatics—one for each sex; in both of these, he did not see more than forty inmates. We refer to this subject more particularly in order to show their wretched condition,—a state to which the lunatics of Christendom were exposed but a few years ago, before benevolence and humanity usurped the place of bolts and bars and stripes.

"The miserable state in which these wretched lunatics are kept," says Dr. D., "calls for severe reprehension;—it is disgraceful to the Turkish government—an opprobrium on Turkish humanity. In cold cells, in the winter season, (there was snow on the ground when I saw them,) with barred unglazed windows, the poor men are chained by the neck to the wall by a heavy iron chain, about six feet in length,—a space to which their exercise is limited. No medical aid is afforded them. They are open to the public gaze, and subject to irritation of an aggravated kind from mischievous boys and lads, who, as I witnessed, seemed to take a pleasure in tormenting them, making, even by blows, the violent doubly furious. In consistency with their treatment, the insane establishment is contiguous to a menagerie; one has to pass through the yard containing the cages in which a few wild beasts are exhibited, to enter that in which are the cells of the lunatics; and the payment for both is the same."—P. 421.

But in justice to the Turks, we will here mention that Dr. Davy admits their bedding and hospital dresses to be "of much better description" than in the British military hospitals. Their beds were raised from the ground, and the bedding consisted of mattresses, pillows, sheets, and a coverlet. This, by the way, was the only thing commendable connected with the Turkish military hospitals; and we state it here merely that it may serve the purpose of introducing the following set-off to the treatment of the lunatics:

"Even itch-patients," says our author, "had the comfort of beds of this description—a treatment singularly contrasted with that in use in the British military hospitals, the itch-ward of which is an abomination, (the men in it lying on boards, naked, excepting the covering of a single blanket,) worthy only of the hold of a slaver."—P. 430.

S. F.

ART. XVIII.—*Nouvelles recherches sur plusieurs poisons tirés du regne minéral.* Par M. ORFILA.—*Annales d'hygiène*, No. 55, Juillet, 1842.
Recent researches in relation to several Poisons derived from the mineral kingdom. By M. ORFILA.

THE records of our criminal courts exhibit so many evidences of the uncertainty of proof in cases of poisoning, and of the difficulty of arriving at any just conclusions, where suspicion of criminality in this respect has been excited, that it must be evident to all there exists as yet a great want of accurate and well-established principles, by which to determine the guilt or innocence of the accused parties. It is not, however, to be supposed that the attention of medical chemists has not been earnestly directed to the settlement of these questions; on the contrary, experiment upon experiment, and observation upon observation have been carefully made and strictly collated, always with some increase of knowledge, but still, hitherto, without supplying the deficiencies which prevented positive conclusions. Among those who have laboured most assiduously and with the attainment of the happiest results in this department of science, is, as is well known, M. Orfila, upon the accuracy of whose experiments, and the honesty of whose statements, the greatest reliance has always justly been reposed.

His attention has recently been turned more particularly to the subject of poisoning occasioned by the principal poison of the mineral kingdom, and the results of his labours in this branch of toxicology have been consigned in a number of separate papers in recent numbers of the *Journal de Chimie Medicale*.* They relate to the methods necessary for their detection in cases where they have failed to be recognised in the matter vomited or found in the digestive canal; in other words, "after they have entered by absorption into our tissues or passed into the urine."

At the outset, M. Orfila relates the course which is original with him and which was invariably adopted in conducting his experiments; it was

"In every first series of experiments, to mingle very small proportions of the poisonous substance under examination with a considerable quantity of alimentary matter, as milk, soup, coffee, wine, &c. and afterwards to act upon at least as large a quantity of the same alimentary matter *without any addition* of the poisonous substance. He then experimented *comparatively* upon the matters found in the digestive canal as well as upon that canal itself; upon the viscera and upon the urine of animals, he had poisoned with different doses of a poison, and upon the same parts of animals of the same species which were killed some hours after having been made to take food, and which had swallowed no poison."

Of the excellence of such a method of investigation, no one can entertain a doubt; it is one that requires a patient and candid experimenter, and when fully carried out, as it was by M. Orfila, must necessarily be rich in reliable facts, and thus be powerfully instrumental in eradicating false

* We have availed ourselves of an abstract of these papers, published by M. Orfila, in the *Annales d'hygiène publique et de médecine légale* of July, 1842, an abstract which it would be difficult to condense any further, and, the translation of which forms the main portion of this paper.

opinions, and in settling the principles of this interesting and important branch of science.

Sulphuric acid is first studied, and the following are the results of a large number of experiments:

"1st. That the presence of free sulphuric acid is easily detected by treating with sulphuric ether the suspected matters vomited or found in the digestive canal, after having coagulated them by heat and reduced the filtered liquids to one-sixth of their volume;

"2d. That it is easy to ascertain that this acid does not come from a super-sulphate (*sulfate acide*), because ether dissolves none of these sulphates dissolved in water, when shaken up with them for one or two minutes only, whilst that time is sufficient for the solution of free sulphuric acid; and even if a small quantity of one of these has been dissolved, it would be detected by concentrating the liquid and pouring into it some carbonate of soda, which precipitates all these sulphates, except those of potassa, ammonia and soda; these, however, will be precipitated, the two first, canary-yellow by the chloride of platinum, and the last, white by silicated hydrothoric acid (*acid phiorhydrique silicé*); non-diluted sulphuric acid is not precipitated by any of these reagents;

"3d. That it rarely ever happens in a case of poisoning by sulphuric acid, if this acid has not been entirely neutralized by magnesia or some alkali, that enough of it cannot be found free, to allow of its detection by ether, either in the liquids vomited, or in those taken from the digestive canal, or in the water in which the suspected solid matters or the tissues of the digestive canal itself, have been washed. Whoever has attempted to wash the stomach of a person poisoned by sulphuric acid, must have assured himself that the water used in washing it, remains acid for a long time and contains a certain proportion of that acid, even after the third or fourth washing;

"4th. That a small portion of the sulphuric acid taken in combines with the tissues of the digestive canal, so that it cannot be dissolved in distilled water, even when boiling; but that its existence cannot be demonstrated by simply decomposing the tissues by fire, as had hitherto been supposed, or even by destroying them by a current of chlorine gas, because the stomach and intestines in their normal state subjected to the influence of a heat sufficient to carbonize them or to that of chlorine, furnish also a certain quantity of sulphuric acid in consequence of the sulphur they contain;

"5th. That it is necessary in order to demonstrate the presence of the combined acid to make comparative experiments with equal weights of stomachs in a normal condition and of others taken from poisoned individuals; in truth, evidently more sulphuric acid is then obtained from the latter than from the former; but that it would be dangerous, in legal medicine, to allow to these kinds of comparative experiments more value than they really possess, because it might happen that in a case of poisoning, the proportion of sulphuric acid combined with the tissues was so feeble that it scarcely differed from that which would be obtained from tissues which had not been poisoned. The physician, therefore, could not be authorized to express a doubt in this respect, unless the quantity of sulphuric acid extracted from the suspected tissues should be much greater than he should have obtained from the same tissues in a normal state, after experimenting comparatively and in the same manner three or four times upon the same quantity of tissues belonging to different individuals;

"6th. That it is difficult if not impossible to detect the presence of free sulphuric acid in the liver and spleen of animals poisoned by this acid, even when it has been given very much diluted, probably because it saturates promptly the free alkalies which it finds in the blood and in these organs, and because it forms soluble sulphates which hardly remain in these viscera; once only in his numerous experiments, did M. Orfila obtain traces of sulphuric acid, by treating fittingly the liver of a dog which had been poisoned by means of sulphuric acid introduced into his stomach while fasting;

"7th. That it cannot, however, be denied that it is absorbed, since it is found

in the urine of poisoned animals in much greater quantity than in that of healthy dogs;

"8th. That it may hence be *useful* in a case of suspected poisoning by sulphuric acid, if the examination of the digestive canal has failed to discover it, to examine what is the proportion of sulphate of baryta furnished by the urine comparatively with that which would be given by the urine of several individuals in a normal state, because the difference might be such that the physician would be authorized to entertain from this fact, *some suspicion* of poisoning, at the same time that he manifested excessive reserve in his conclusion."

M. Orfila adds as the result of experiment, "that three, four or five times as much pure and dry sulphate of baryta is obtained by treating with the chloride of barium and nitric acid, the urine of dogs which are under the influence of concentrated or diluted sulphuric acid, as can be procured from the same quantity of urine of the same animals when not poisoned."

Spots produced by sulphuric acid.—It is well known that "blue and black cloths and felt are coloured red by this acid, the colour often passing after a certain time to brown; and that, though leather is not stained, its substance is corroded where the acid has been placed. In general, if the sulphuric acid employed is concentrated, the spot remains moist for some time, because the acid attracts the vapour of water contained in the air."

M. Orfila remarks, that it is necessary to recollect that, in the dyeing of these cloths and of felt hats, in the tanning of leather and in the manufacture of blacking, some preparation containing sulphuric acid is invariably made use of.

It will be impossible, therefore, to ascertain positively whether the acid obtained by decomposing the spots by fire, as is recommended by M. Devergie, is derived from these, or is part of that which exists in these different substances; for it has been ascertained by experiment, that "*upon decomposing by fire, leather, blue or black cloth, or a piece of black hat, not spotted by sulphuric acid, we obtain in the recipient a liquid containing a considerable quantity of supersulphate of ammonia and which will yield sulphate of baryta when treated with aqua regia and the chloride of barium.* A result easily anticipated when the mode of preparing these substances is taken into consideration."

Some other method must therefore be substituted for that advised by Devergie. It was discovered by M. Orfila, that upon macerating the spotted parts in cold water for an hour, he invariably obtained, even from old spots, or when made with very small proportions of diluted or concentrated acid, evidences of the presence of the sulphuric acid: this, however, was equally the case when he operated upon portions of the same cloth, felt or leather which had not been spotted, though the acid obtained here was in smaller proportion.* Acting upon this, he recommends the following process:

* "The *London Lancet* of the 2d October, 1841, reports a medico-legal examination confided to Dr. Robert Dundas Thomson, which will not be without interest here. A woman, in a fit of anger, threw into a man's face a large quantity of sulphuric acid, of which a portion fell upon his hat. The parts, spotted red, were boiled in distilled water and the presence of sulphuric acid was easily recognised in the liquid; but, at the same time, the portions of the hat which were *not spotted* having been treated in the same way, the liquid obtained gave indications also of sulphuric acid. These results conformable to those described in my *Memoir*," says M. Orfila, "induced Dr. Thomson to ascertain the proportion of sulphuric acid which it was possible to collect by subjecting to the same operations equal portions of felt spotted and *not spotted*, and he found that the *spotted* portion gave 10 centigrammes of sulphate of baryta, whilst the portion not spotted furnished only 2 centigrammes 5 milligrammes."

"The spotted parts should be allowed to remain for two hours in *cold* distilled water. If the filtered liquid reddens litmus, precipitates a soluble salt of barium, and, after having been evaporated almost to dryness with metallic copper, gives off sulphurous acid gas, the experimenter must determine if these effects are due to the presence of a super-sulphate, (in the manner shown above); if he ascertains that the spot is not produced by one of these salts, he must weigh the sulphate of baryta obtained, and compare its weight with that which shall have been given by an *equal* proportion of the *same* cloth, of the *same* hat, or of the *same* leather *not spotted* and treated in the same way.

"If by chance, which however rarely occurs, the sulphuric acid which has occasioned the spots is not dissolved in the water, it would be necessary to proceed to the decomposition of the *spotted* parts by fire, taking care however, to subject to this process also an equal quantity of unspotted cloth, leather, &c. The *differing* proportion of sulphate of baryta obtained in the end by one or the other of these processes, might enable the analyst to pronounce certainly, if there was an appreciable difference."

Nitric Acid. The experiments of M. Orfila, in relation to this acid, demonstrate that its presence "in alimentary mixtures, or when existing in very small proportion upon the tissues of the digestive canal, which have been touched by it, may be shown, by treating these different matters with the bicarbonate of soda, which forms with the acid nitrate of soda, and with chlorine gas, which precipitates a *portion* of the organic matter. It is not enough to *affirm* that the acid is present, to have obtained a final product which colours the sulphate of narcotine red, and the protosulphate of iron brown, or which when treated with sulphuric acid and copper, gives off a gas capable of colouring the salt of iron brown, because the same results are obtained from alimentary mixtures in a *normal state*, which have been treated in the same manner; and that it is absolutely necessary to obtain a residue which fuses upon burning coals, and which being decomposed by copper and sulphuric acid, gives off an *orange-yellow gas*, which colours the protosulphate (*acide*) of iron brown, and then violet on the addition of sulphuric acid."

"2d. That these characters can only thus be ascertained when the proportion of nitric acid is considerable, for otherwise it would be mingled with too great a proportion of organic matters, chlorides and other salts, to be demonstrated.

"3d. That by distilling the suspected matters, solid or liquid, with concentrated sulphuric acid, quantities of nitric acid may be detected much smaller, as the process is easier of execution, and as it furnishes the acid in a free state, without exposing to the least chance of error."

After stating that by this last process, nitric acid, when administered moderately diluted, may be detected in the urine of dogs, in which, when *normal and unputrefied* it never exists, either free or combined with bases, and that he has never as yet been able to detect it in the *liver* or *spleen* of dogs poisoned by this acid, concentrated or diluted, whether introduced by the stomach or applied to the cellular tissue of the *neck*; M. Orfila concludes his remarks respecting this acid as follows:

"If after these different investigations, there have been obtained in the recipients certain liquids, which are colourless, acid, reddened the sulphate of narcotine, brown the proto-sulphate of iron, a shade which shall pass to violet with an excess of sulphuric acid, and which, being saturated with potassa and evaporated to dryness, leave products of a yellowish, yellowish-red, or reddish-brown colour, which *fuse* on burning coals, and give off with copper and sulphuric acid, an *orange-yellow gas*, the bioxide of nitrogen, which colours the proto-sulphate of iron first brown and then violet, it *may be affirmed*, that the suspected matters contained nitric, or hypo-nitric acid, a nitrate or a hypo-nitrate.

"The same will be the case, even if the solid product derived from the saturation of the distilled liquids with potassa does not fuse upon burning coals, and does not give off an *orange-yellow gas*, provided the other characters can be all

ascertained, because these characters are never furnished by the matters in a *normal state*, when subjected to the process of distillation with sulphuric acid.

"If the characters indicated in the preceding conclusions are in part wanting, or are not so sufficiently marked that no doubt of their existence may be entertained, it would be far from warranting the conclusion, that the suspected matters contain none of the nitric compounds of which mention has been made, for such is the state of things whenever the proportions of nitric or nitrous acids are excessively minute. In this case it would be proper to combine with the elements furnished by chemistry, those which might be derived from the symptoms, the lesions of tissue, &c."

Hydrochloric acid, when administered to dogs, diluted with water, may be detected, according to our author, in the urine of these animals, which "yields with the nitrate of silver a quantity of pure and dry chloride of silver, five or six times as great as that derivable from the same proportion of the urine of dogs not poisoned by it; which proves that the hydrochloric acid introduced has been carried into the bladder in a free state, or rather in the form of a chloride, after having acted upon the free soda, which forms a part of the blood or of some one of our organs.

"Concentrated hydrochloric acid introduced into the stomach of fasting dogs, also reaches the bladder and may be detected in the urine. The same thing happens when the concentrated acid is introduced into the subcutaneous cellular tissue of the thigh of a dog."

It would seem, according to M. Orfila, that hydrochloric and sulphuric acids used in a very concentrated state, and found in the urine, "become enfeebled before being absorbed, by provoking a more or less copious exhalation of liquids; every thing leads to the opinion also, that when introduced into the stomach, they augment the secretion of bile, and that they are entirely or partly saturated by the free soda contained in that liquid."

Our author has never succeeded in detecting free hydrochloric acid in the liver or spleen of animals poisoned by it.

Oxalic Acid. M. Orfila states that "the urine of dogs subjected to the action of *oxalic acid* diluted with water, ordinarily deposits insoluble oxalate of lime, which is not the case with that of the same animals in a healthy state, unless they have eaten sorrel."

The establishment of the fact, that absorption of even the most caustic and irritant poison takes place in every case where death does not immediately occur, and then we may detect their presence in the stomach or intestines, has introduced a new era into the science of toxicology, by enabling the physician to pronounce with the utmost positiveness in judicial examinations of cases of suspected poisoning, that when these poisons are found in the viscera, they must have been artificially introduced into the body and carried into them by absorption. The experiments of M. Orfila, chiefly, fully warrant these statements, as will be seen in the conclusions to which they have led him, and which are now present.

"It results evidently from the facts relative to the absorption of *sulphuric, nitric, hydrochloric*, and *oxalic acids*;

"1. That these acids should be sought for in the different viscera, as well as in the urine, whenever they have escaped detection in the digestive canal, or in the matters vomited or passed by stool, which is not unfrequently the case when the dose of the acids employed is not considerable, and when there has been frequent evacuations upwards and downwards, which have not been kept, or when an alkaline antidote has been administered. In fact, even when these acids have been taken in a *concentrated state*, they will have become weakened in the stomach and intestinal canal, by uniting themselves with the liquids contained in these at the moment of poisoning, with those of which they may have provoked the

exhalation, or at last, with those which may have been administered to the patient, and they will infallibly have been absorbed.

"2. That the duly ascertained presence of these acids *in a free state*, in the *liver*, in the *spleen*, or in some other organs more or less distant from the digestive canal, or even that of a soluble *nitrate*, would establish incontestably that these acids had been absorbed, either after their introduction into the stomach or the rectum, or after their application externally, because it is no more possible to extract any of them from these viscera in a normal state, than to obtain from these a soluble nitrate. If the existence of these agents coincided with symptoms and lesions of tissue similar to those observed in cases of poisoning by these acids, there can be no doubt that poisoning has taken place.

"3. That the extraction of nitric or oxalic acids from the *urine* does not warrant the affirmation that poisoning by these acids has taken place, because there are aliments which contain the binoxalate of potassa, and medicines which contain nitre, and these salts may have passed into the urine of a person who has not been poisoned; but that poisoning by one of these two acids may be affirmed, if, in the case under examination, the history, the symptoms, and the lesions of tissue indicate that an irritant poison has been taken, and if it is proved that the individual has not, a short time before the attack of sickness, made use of the food or medicines which have been mentioned.

"4. That still greater reserve should be maintained in cases of suspected poisoning by *sulphuric* and *hydrochloric* acids, as respects inductions drawn from an examination of the urine, because, although it is true that in all the experiments made with these two poisons, the urine has invariably furnished a *much greater* quantity of sulphates and chlorides than that usually contained in it, it is equally sure that after the use of certain aliments, it may *naturally* present more considerable proportions of these salts; so that, while taking this element into consideration, it can only be made useful for the solution of this question, by determining how large a portion of sulphates and chlorides a certain quantity of urine taken from several *healthy* individuals contains, comparatively with that which has been obtained from the urine of the person supposed to be poisoned, and if possible, how large a portion it gave of them before the attack of sickness. It must not be omitted to examine what sort of food may have been taken by the patient shortly before the appearance of the sickness, whether or not it was highly salted, &c. It is evident, therefore, that *in the absence of symptoms* and of *lesions of tissue* which would indicate poisoning by an irritating substance, the physician might undoubtedly be assisted by the element here spoken of, but that he should not attach to it greater importance than it really possesses."

Having treated thus fully of the methods by which the chief mineral acids and oxalic acid, so closely resembling them in its effects, may be discovered in the body when poisoning was suspected, M. Orfila passes to the consideration of the methods for the detection of potassa and soda, when administered with a criminal intent. His experiments have led him to these conclusions in relation to *potassa* and the *carbonate of potassa*.

"1. That very concentrated boiling alcohol dissolves a considerable portion of the potassa (by alcohol or by lime) which may be present in a solid organic mixture, either in a caustic state, or in soap, or in any other combination with *vegeto-animal* matter, and that it does not sensibly dissolve the salts of potassa naturally contained in this mixture, nor those which may have been accidentally introduced into the stomach, as medicines, with the exception, however, of the acetate of potassa.

"2. That it dissolves also a certain quantity of the carbonate of potassa, which may have been added to this mixture with the intention of causing poisoning, or which may have been formed by the action of the carbonic acid of the air upon the caustic potassa, or by the decomposition of the organic matters by that alkali. Carbonate of potassa, however, is entirely insoluble in concentrated alcohol; whence we must conclude, that the solution in question takes place

through the medium of a portion of fat, or of other organic matter with which this salt has probably combined itself.

"3. That solid organic mixtures, to which *neither potassa nor the carbonate of potassa has been added*, even when they are in large quantity and contain *naturally* salts of potassa, such as the lactate, the acetate, the tartrate, the sulphate, the phosphate, or the chloride of potassium, when treated with concentrated boiling alcohol, do not yield to that menstruum sufficiently sensible proportions of these salts to enable us to demonstrate their presence in the alcoholic solution, by means of the chloride of platinum and of perchloric acid, reagents which disclose perfectly traces of free or carbonated potassa in the alcoholic *solution* whenever that alkali has been mixed with the alimentary mass; that if the *normal* alcoholic liquids in question, treated as those to which potassa has been added, give in the end a slightly alkaline residue, which restores, after a certain time, the blue colour to paper reddened by an acid, it is without doubt, in consequence of their containing a little soda, or perhaps a proportion of potassa so minute as to be insensible to the action of the chloride of platinum or of perchloric acid.

"4. That if pure acetic acid diluted with three parts of water, and heated with a solid organic mixture to which potassa or carbonate of potassa has been added, and which has previously been exhausted by boiling concentrated alcohol, can dissolve, *in certain cases*, a portion of the potassa or of its carbonate, which the alcohol had not attacked, it dissolves also several salts of potassa *naturally* contained in this organic mixture; so that it becomes difficult, if not impossible, to decide, when the operations are concluded, whether the alkali obtained has been added, or is derived from some of the salts of potassa which are found in the organic matters in a natural state, and which the acetic acid shall have dissolved or decomposed.

"5. That there is good reason to reject the employment of chlorine, proposed by M. Devergie, for the destruction of the animal matter which might mask the potassa, because if this gas is passed into an alcoholic solution derived from an organic *liquid*, which has had potassa added to it, and then been evaporated to dryness, and treated with concentrated alcohol, or into the solid matter exhausted by the alcohol, as proposed by M. Devergie, the potassa will never be obtained in a caustic state, but as a salt, and in a solution which, far from being alkaline, is strongly acid. and because, moreover, when the *solid* matter is treated with chlorine there is necessarily dissolved, by the acid of this chlorine and the hydrochloric acid which has formed itself, a considerable quantity of some of the salts of potassa, contained *naturally* in the solid mass in question; in this last case, the objection made to the use of acetic acid is fully applicable."

M. Devergie, however, does not place entire confidence in this process, and states in his work on Legal Medicine the objections to which it is liable. M. Orfila rejects these objections as not being tenable, and shows conclusively that they are not at all calculated to sustain M. D.'s want of confidence in the process recommended by himself. He also takes occasion, in noticing one of M. D.'s conclusions, to lay down this important principle in toxicology.

"In legal medicine, it is essential to avoid, as far as possible, relying upon the copiousness or the traces of a precipitate, because what may appear copious to one physician, may seem very little to another; it is essential to come to this undeniable result; a poisonous substance is obtained from a given matter by a certain process, which does not yield any when the same matter has not been mixed with this substance; therefore, the poison found has been added."

One more conclusion is presented; it is

"That potassa dissolved in water and introduced into the stomach, is absorbed and carried into the different organs, where it may be found again."

Such are the facts upon which the experimenter must base his conclu-

sions in investigations for potassa and its carbonate, in cases where their administration with a criminal intent is suspected. The manner in which they are to be used is thus laid down by M. Orfila.

"If a *liquid* vomited or found in the digestive canal is alkaline before and after having been subjected to a prolonged ebullition, and if after being evaporated to dryness, and treated with boiling alcohol, marking 44 degrees, it leaves upon being again evaporated, carbouized by fire in a porcelain capsule, and burned to ashes in a covered silver crucible, an ashy residue, soluble in water, which restores the blue colour of reddened paper, and which having been in part dissolved and filtered is not troubled by carbonic acid gas, and precipitates with the chloride of platinum and with perchloric acid like potassa, we may, *if not affirm* that there has been ingestion of potassa by alcohol, potassa by lime, or of carbonate of potassa into the stomach of the individual suspected of being poisoned, at least establish a *great probability* in favour of the fact. It is proper, however, to be reserved in this respect, because it would not be strictly impossible, although it is hardly probable, that the person in question had taken a *large quantity* of certain alimentary substances containing naturally a larger proportion of the *salts of potassa* soluble in alcohol than those upon which these experiments have been made, and that the potassa derived on a final analysis, came from these salts.

"*It may be affirmed*, on the other hand, that there was ingestion of potassa by alcohol, of potassa by lime or of the carbonate of potassa, and consequently poisoning; if, after having discovered the free or carbonated alkali by the means indicated above, we learned that the person had experienced a short time after having eaten or drunk, vomitings of a bloody or black matter, which did not effervesce upon the pavement, and which restored the blue to reddened litmus-paper, acute pains in the abdomen, stools, as well as several other symptoms analogous to those occasioned by caustic poisons.

"We may also pronounce *affirmatively* upon the poisoning, even when, the presence of the alkali having been ascertained, as has just been mentioned, several of the above symptoms have not been manifested, if upon opening the body, the tissues of the digestive canal, and particularly of the stomach, are found softened, inflamed, ecchymosed, ulcerated, in a state of eschar, or perforated in certain parts.

"If a *solid* matter either vomited or found in the digestive canal restores the blue colour of reddened paper, and preserves its alkalinity after having been boiled in concentrated alcohol, and if the alcoholic solution, evaporated, carbouized and reduced to ashes, is acted upon by carbonic acid, the chloride of platinum and perchloric acid, as is potassa, the same conclusions are to be drawn as in case of the liquid portion which has just been considered.

"It would be difficult, if not impossible, to decide in many of these cases, whether the alkali introduced and dissolved by the alcohol, was *pure* and *caustic* or *carbonated*, because the carbonate of potassa, which is insoluble in alcohol when it is not mixed with organic matter, may dissolve in this menstruum through the assistance of some alimentary liquids with which it shall have been mixed; and because, if recourse was had to an acid with the intention of ascertaining whether or not it effervesced, we might still be led into error; for, caustic potassa easily passes into a carbonate when treated with organic matters, so that there might be effervescence, even when the potassa had been taken in a caustic state. On the other hand, the absence of effervescence would not prove that the alkali had been taken in a caustic state, because it often happens that in the midst of these organic mixtures a *very feeble proportion* of carbonate of potassa is decomposed by the acids without its being distinctly observed that effervescence has taken place. Of what importance is it, moreover, if it is not possible, in many of these cases, to arrive at a solution of this problem? The essential point is to recognise the fact, that in the suspected matters potassa is present in one of the states that have been pointed out.

"If the investigations of the liquids or solids vomited or found in the digestive

canal are fruitless, and upon treating the liver, the spleen, and the kidneys with boiling water, alcohol, &c., potassa is obtained, it may be affirmed that this alkali had been introduced into the animal system by means of absorption. This fact, connected with these derived from the symptoms and the lesions of tissue, would warrant the affirmation of poisoning by potassa.

"We cannot pronounce positively that a person has not been poisoned by potassa or the carbonate of potassa, from the sole fact that it has been impossible, on following the indicated process, to extract from the vomited matter, or that found in the digestive canal, caustic potassa or the carbonate of potassa. In fact, it might happen that a dose of potassa capable of causing serious accidents, had been introduced into a stomach containing a considerable proportion of acid, or a considerable quantity of acid alimentary substances, that it had exerted an energetic irritating action, and that it had afterwards been changed into one or more salts which alcohol would not dissolve. It would then be proper to study attentively the march and nature of the illness, the anatomical lesions, &c.; perhaps one might be able, upon taking these different elements into consideration, to found *probabilities* and *presumptions* of poisoning."

Soda.—Similar conclusions to those relative to potassa result from the experiments on soda, with this exception, that "the alcoholic solution of several alimentary substances in a *normal state*, evaporated to dryness, carbonized and incinerated as before mentioned, yields when treated with water, an alkaline ash containing *carbonate of soda*."

This might be mistaken for a poison, whilst it in reality is nothing more than the soda naturally existing in several aliments. M. Orfila shows, by the results of experiments undertaken for the purpose, how this error may be avoided.

"1. The matters extracted from the digestive canal of an animal poisoned by soda, as well as those which have been vomited, if they still contain traces of this alkali, when they have been dried with a moderate heat, yield with boiling concentrated alcohol a solution, which promptly restores the blue colour to litmus paper, reddened by an acid; the alimentary substances spoken of above, when in a *normal state*, treated in the same way, *do not yield an alkaline liquid*.

"2. The ashes obtained by decomposing at a red heat in a silver crucible, the alcoholic solution of soda in a case of poisoning, when treated with boiling water, will furnish a *solution*, which promptly restores the blue colour of reddened litmus-paper, and which being concentrated by evaporation will yield with silicated hydrothoric acid, (*acide phlorhydrique scilicé*) a gelatinous and transparent precipitate, and with the chloride of platinum, *if it is very much concentrated*, a canary yellow and slightly granular precipitate: perchloric acid will not affect it. The ashes derived from a mixture of two or three quarts of animal (and vegetable) liquids, (wine, bouillon, coffee, and bile,) treated in the same manner, has never given a watery solution susceptible of precipitation by hydrothoric acid, and by the chloride of platinum, although it restored the blue colour to reddened litmus-paper. If it could be affirmed in regard to these two characters, that the result would never be different, that is to say, that in no case the ashes obtained from a *normal mixture* will furnish a watery solution precipitable by silicated hydrothoric acid, and by the chloride of platinum, there could be no hesitation in concluding, after having obtained these precipitates from an ash derived from an *alkaline* alcoholic solution, that the soda had been introduced as a poison; but it would be rash to proceed so far, for it is not rigorously impossible that certain alimentary substances, taken in very large quantity, and treated as mentioned, will not give an ash which, when dissolved in water, will yield with the above named reagents, precipitates analogous to those which would be occasioned by a small portion of soda introduced in a free state. We should, therefore, be very circumspect in such a case, and while we determine that the alkali found is soda, should only pronounce upon its origin with great reserve, unless, however, the symptoms experienced by the patient, and the cadaveric

lesions, should be of a nature to remove the difficulty. Little importance should be attached, in the case before us, to the *copiousness of the precipitates* obtained by the silicated hydrothoric acid, and by the chloride of platinum, in cases of poisoning, unless they are so copious that it is impossible to attribute them to *normal soda*; in every other case, it would be very difficult, if not impossible, to judge if a greater or less quantity of precipitate announced the introduction of soda as a poison or merely in a normal state."

Lime.—The directions given by M. Orfila for the detection of lime in cases of poisoning are,

"To ascertain the alkalinity of the suspected matter, evaporate this to dryness, if it is not in a solid state, treat the product with *cold* distilled water, filter and pass into the liquid an excess of carbonic acid gas. The liquid should then be boiled for some minutes to cause the precipitation of the carbonate of lime; this when washed, dried and calcined in a platinum crucible, will give lime or the carbonate of lime. In effect, there is no alimentary liquid or product of vomiting which yields a precipitate of the carbonate of lime, when it is treated with carbonic acid, unless it has been mingled with lime.

"It might lead to great errors, if we treated with boiling distilled water the product evaporated to dryness, and sought for the lime, either by means of oxalate of ammonia, or by evaporating the liquid and incinerating the residue, because several alimentary liquids in a *normal* state yield lime when they are subjected to one or the other of these processes.

"Carbonic acid gas does not precipitate the *whole* of the quicklime introduced into the stomach, because a portion of this alkali is transformed into a salt, by combining with the free acids contained in the alimentary liquids or in the digestive canal, and probably also because another portion is retained by the organic matter with which it forms a sort of soapy compound.

"It would be therefore imprudent to declare that a person had not been poisoned by lime, from the simple fact that we could not detect the least trace of it by means of carbonic acid, the poisoning having possibly been occasioned by a small quantity of this alkali given before or after the introduction into the stomach of acid liquids, such as wine, &c.; in this case, the lime would have been transformed into an insoluble or soluble calcareous salt, which carbonic acid would not decompose. In such a case, the physician should examine closely the history, symptoms, cadaveric alterations, &c."

Baryta and its compounds.—That the chloride of barium is absorbed when taken internally was ascertained by M. Orfila, by administering 6 grammes of this salt dissolved in 180 grammes of distilled water, to a dog; an appreciable quantity of baryta was obtained after death from the *liver, spleen and kidneys*. The following considerations, and the processes for the detection of these substances, are presented as the result of experiment.

"*Baryta* and the *chloride of barium*, unless they are in very considerable proportion in the suspected matters or in the organs, pass invariably and almost entirely into the state of insoluble carbonate and sulphate of baryta, so that, if these matters or these organs are treated with distilled and even boiling water, the solution contains none, or but a very small portion of a barytic compound. It is, therefore, in the portion insoluble in water, that this compound must be looked for: 12 or 15 centigrammes of chloride of barium were often mingled with 2 or 300 grammes of a mixture of soup, milk and coffee, without an atom being detected in the watery solution, whilst a considerable proportion of baryta could be obtained from the portion which the water had not dissolved.

"Still more certainly would the same be the case with the *carbonate of baryta*, which is insoluble in water; it might, however, happen, if this had been administered in a large dose, that a large portion had been transformed in the digestive canal into the acetate or into the chloride of barium, by means of the acetic and hydrochloric acids contained in the stomach. Whence it follows, that, in medico-

legal investigations for baryta and its compounds, the physician should examine successively the liquids and the solids; these last, especially, should be the objects of his most particular attention, in all cases where, after the administration of a soluble sulphate, as a counter-poison, the barytic compound has been necessarily transformed into an insoluble sulphate.

"As regards the *liquids* vomited or found in the digestive canal, as well as those resulting from the action of boiling distilled water upon the solids, they are to be evaporated to dryness in a porcelain vessel at a moderate heat; the mass must be treated with distilled water sharpened with pure nitric acid; the liquid is to be filtered after boiling some minutes and evaporated in a porcelain vessel until it is carbonized and no longer gives off smoke; the charred mass is then to be removed with a clean knife and reduced to ashes in a platinum crucible; the ashes will contain either caustic or carbonated baryta and a small quantity of the bioxide of barium, even if the liquid originally contained the chloride of barium; for, as regards this last salt, experience proves that during incineration, it is decomposed by the carbonates of potassa or of soda which form a part of the ashes, and changed into the carbonate of baryta. The ashes are to be boiled in distilled water; the solution when filtered will offer all the characters of baryta water or of the chloride of barium, if it contains either of these compounds. The portion of ashes not attacked by the water, must then be treated with diluted nitric acid in order to dissolve the carbonate of baryta it may contain; the filtered solution evaporated to dryness and calcined in a platinum crucible, will leave *caustic baryta* or a little bioxide of barium.

"To look for the insoluble barytic compound which might be present in the solid matters, in the tissues of the stomach, of the liver, of the spleen, &c., in the state of carbonate or sulphate of baryta, the matter or the organ exhausted by water sharpened with nitric acid is to be dried in a porcelain vessel and carbonized by pure and concentrated nitric acid; the charcoal is then to be incinerated in a platinum crucible which is to be maintained at a red heat; in two hours the carbonate of baryta will be decomposed and the sulphate changed into the sulphuret of barium. The ashes are to be treated with pure diluted nitric acid, which will disengage hydrosulphuric acid gas, recognisable by its odour, will precipitate sulphur, and give a soluble nitrate of baryta; then filter and evaporate in a small porcelain crucible; the solid nitrate of baryta, calcined in a platinum crucible, will leave caustic baryta, mixed with a little bioxide of barium."

Salts of lead, of bismuth, of tin, of silver, of gold and of zinc. "The salts of these metals introduced into the stomach of dogs, after having been dissolved in different quantities of water," have, according to M. Orfila, "been absorbed and found in the liver and in the urine of these animals; the cadaveric examinations having been made immediately after death, whether the dogs were killed by hanging or by the action of the poison, and the liver having been immediately removed, it is evident that imbibition after death cannot account for the conveyance of these poisons into the organs, but that it is due to absorption.

"The presence of *lead, of bismuth, of tin* and of *zinc*, in the *livers* of poisoned animals, is ascertained by boiling these organs for two hours in distilled water, filtering the decoction and evaporating it to dryness. The product is then carbonized by means of nitric acid; and the dry and finely powdered charcoal is treated with heat and pure nitric acid diluted with an equal quantity of water, if there is question of lead, bismuth, or zinc, and by a mixture of twenty parts of hydrochloric acid with one part of nitric acid, if tin is sought for. The salts obtained are filtered and evaporated to dryness and the residue dissolved in distilled water; by passing a current of hydrosulphuric acid gas through the filtered liquid, we obtain a precipitate of the sulphuret of lead, of bismuth, of zinc, or of tin. The three first of these sulphurets, treated with diluted nitric acid, part with sulphur and give a liquid containing nitrate of lead, of bismuth, or of zinc, which are easily distinguished. As regards the bisulphuret of tin, it is easy to characterize it, either by decomposing it with potassa or by heating it with hydrochloric acid, which gives a soluble bichloride of tin and disengages hydrosulphuric acid gas.

"It is better to act upon the aqueous *decoction* of the liver, although the whole of the absorbed poison is not thus obtained, than to carbonize directly these viscera with nitric acid, in order to avoid the complications which might be occasioned by the copper and lead *naturally* present in our tissues; for, if the organ was carbonized directly by concentrated nitric acid, and especially, if the charcoal was heated to a red heat, during some time, to remove from it the organic matter and to incinerate it in part, a certain quantity, if not the whole of the *normal* copper and lead would infallibly be dissolved by the acids which would be ultimately employed.

"It is important to notice, in making these investigations, that filtering paper (*papier Joseph*) often contains, in considerable quantity, a compound of lead, which the suspected liquids easily dissolve while filtering, provided they are acid; so that it might happen in a medico-legal investigation, that a quite considerable portion of lead was obtained, which could be derived from the paper and which might in that case lead to error. These papers would have also the serious inconvenience, when used in examining for salts of bismuth, tin, or zinc, of yielding a salt of lead which would mingle with one of these three salts, would often change the colour of the precipitates formed with hydrosulphuric acid and would complicate the analytical operations. We cannot be too careful in the use of such papers, which are much more common than is generally supposed; we should as a matter of course make use of Berzelius paper (*papier Berzelius*), or at any rate wash with *hydrochloric acid*, until the solution contains no more lead, that of which we would make use and which might contain lead.

"The presence of compounds of lead, bismuth, tin or zinc, may be demonstrated in the urine, by evaporating this to dryness, carbonizing the product with nitric acid, and treating the charcoal as in the process for seeking them in the liver. It would be wrong to filter the urine, and to act only upon the filtered liquid, for it may often happen that the salts under consideration have been decomposed and precipitated and that they are all found in the deposit from the urine.

"Besides, these metallic salts are like all other absorbed matters; if the power of urinating is left to the animals, it will often happen that no trace of the metallic salt will be found in the urine, because it will be examined either too soon or too late. In these investigations, M. Orfila has constantly succeeded in demonstrating the presence of these poisons in the liquid, because the penis was tied and the whole product collected in the bladder could be thus operated on."

Gold and silver may be detected in the "liver of dogs poisoned by the nitrate of silver, or by the chloride of gold, by carbonizing directly these viscera with concentrated nitric acid, without boiling the organ previously in distilled water. The charcoal, when the salt of *silver* has been used, is to be treated with pure nitric acid, diluted with water, and boiling, and the filtered solution precipitated by hydrochloric acid. *Chloride of silver* is immediately formed, from which metallic silver may be obtained, after having been well washed and dried. Where *gold* is suspected, it is sufficient to incinerate the charcoal in the vessel in which it was formed to perceive in the midst of the ashes, still partly carbonaceous, *lamina of metallic gold*. Besides, on boiling these ashes in *aqua regia*, after having washed them in water, we obtain the chloride of gold, which being evaporated and decomposed by fire, leaves metallic gold. Here there is no cause for fearing the lead and copper *naturally* present in the liver, because the silver is separated by hydrochloric acid which does not precipitate weak solutions of lead and copper, and because the gold, not being attacked by nitric acid, may be easily separated from the nitrates of copper and lead, which might have been formed by the action of this acid or the *normal* lead and copper."

"The presence of silver in the urine is shown by evaporating this to dryness, and acting upon the product by *aqua ammoniæ*; in a short time solution of the chloride of silver is obtained, which is to be precipitated by saturating the ammonia with nitric acid.

"Urine containing *gold* evaporated to dryness, and carbonized by fire, yields a charcoal which it is only necessary to boil with *aqua regia* to convert the gold

into a chloride; by evaporating this salt to dryness and decomposing it by fire, we obtain metallic gold."

M. Orfila further observes, "that the processes just recommended for the detection of salts of lead, of bismuth, of tin, of zinc, of gold, or of silver, in the liver, may be put in use with the greatest success when we would seek for these same salts in the matters vomited or found in the digestive canal, or in the tissues of the canal itself, and that they should even be preferred to all those which have hitherto been indicated, because they are of great simplicity, of easy execution, and as delicate as can be desired."

This valuable abstract, prepared by M. Orfila himself, is closed with an important note, called for by the reading of a paper by M. Millon before the *Académie des Sciences*, on nitric acid. It is there stated "that the organic matters are much more readily and entirely burned by this acid, when a small portion of chlorate of potassa is added."—*V. les Comptes Rendus Séance du 13 Juin, 1842.*

M. Orfila, desirous of ascertaining how far this might advantageously modify the process of carbonization by nitric acid, which had been recommended by him in 1840, poisoned several dogs with tartar emetic, and, upon acting on their livers, satisfied himself that dry and friable charcoal was easily obtained by treating 100 grammes of dried liver with 100 grammes of concentrated nitric acid, making 41 degrees on the areometer, and with six grammes and six decigrammes of crystallized chlorate of potassa, provided the temperature of the furnace upon which the cup was placed was moderately elevated. It was only necessary to boil this charcoal twenty to twenty-five minutes in hydrochloric acid, diluted with its volume of water, to obtain a transparent yellowish liquid, which did not froth when introduced into Marsh's apparatus, and which gave instantly numerous and large antimonial spots. When the furnace was not sufficiently heated, the carbonization took place *without flame*, leaving a fatty charcoal which gave with hydrochloric acid a blackish solution, frothing a great deal in the apparatus.

M. Orfila, besides, expresses himself as being convinced beforehand, "that the same results will be obtained with the salts of bismuth, tin, silver, gold, &c., as with those of antimony, and that henceforth it will be proper to carbonize the livers of animals poisoned by these salts, with concentrated nitric acid, to which a *fifteenth* of its weight of crystallized chlorate of potassa has been added."

The importance of the investigations and conclusions, which we have thus presented, will render any apology for the length of the extracts unnecessary; for we can truly say that the careful study of this subject will fully compensate for the time devoted to it, with the amount of accurate information obtained.

C. R. K.

BIBLIOGRAPHICAL NOTICES.

ART. XIX.—*A System of Practical Surgery.* By WILLIAM FERGUSSON, F.R.S.E.: Professor of Surgery in King's College, London, Surgeon to King's College Hospital, &c. &c. with 246 Illustrations, from drawings by Bagg, engraved by Gilbert. With notes and additional illustrations, by GEORGE W. NORRIS, M.D., Surgeon to the Pennsylvania Hospital. Lea & Blanchard, 1843, pp. 629, 8vo.

THE object of this work is to present "a manual of the details of Practical Surgery, which shall in some degree meet the wishes and wants of the student, as well as of the surgeon already engaged in practice," and the author has proved that he well knows what those wishes and wants are, and that he is fully competent to the task of supplying them. Indeed, we know of no volume in which the young surgeon will find so clearly and concisely described, as in the present, the various duties he is called on to execute, and the simplest and most efficient methods of performing them; and we feel sure that its publication will greatly contribute to the advancement of the art of surgery, by rendering the student familiar with its elements and details.

The work is divided into five parts. The first is devoted to the elements of Practical Surgery, and comprises an account of the various surgical instruments and the best mode of using them, with some general observations on the diseases, accidents, and operations, which come under the care of the surgeon.

The remaining four parts are appropriated to the four anatomical divisions of the frame,—the two extremities,—the head and neck,—the chest, abdomen and pelvis. In each of these parts the author first describes the surgical anatomy of the region, and then, in successive chapters, the dislocations, fractures, ligature of arteries, excisions, amputations, and the various other operations peculiar to each region.

In describing the surgical anatomy of each part, "elementary details, have in general been omitted, and the descriptions have been arranged more with the view to encourage ocular inspection than to facilitate the prevalent, baneful, and schoolboy system of acquiring names from printed lessons,—a kind of knowledge which is totally worthless to the Practical Surgeon."

In treating of the different operations, the author has shown sound judgment, in not perplexing the student by describing too many methods, but in restricting himself to an account of the one or two which his own experience has led him to consider the best. In relation to subjects *adhuc sub judice*, as for instance, the superiority of the circular or flap amputations, &c., the author has stated their comparative merits and demerits with extreme candour, and in his appreciation generally of different operative methods, he proves that he is a practised surgeon.

We do not pretend to say that the work is entirely free from faults, but these are so far outweighed by its merits that we feel no disposition to dwell upon them; and after all its faults are rather those of omission than of commission. What Mr. F. has done, he has done so well that we cannot but consider it to be a defect that he has not done more—that he has not fully discussed some subjects which he has merely touched upon, as for instance, some of those noticed in the first part.

In evidence of the correctness of the favourable opinion we entertain of this work, we shall give one or two extracts; and first we shall select the chapter on the "Means and Instruments for suppressing hemorrhage."

"The means and instruments for temporary suppression of bleeding from wounded arteries, (the most troublesome and also the most formidable occurrence in all cutting operations on the living body,) are few and simple, in the hands of a good surgeon. In amputations of large portions of the extremities, a slight degree of pressure with the fingers or thumbs, will, if judiciously applied over the main artery, be sufficient.

Fig. 20.

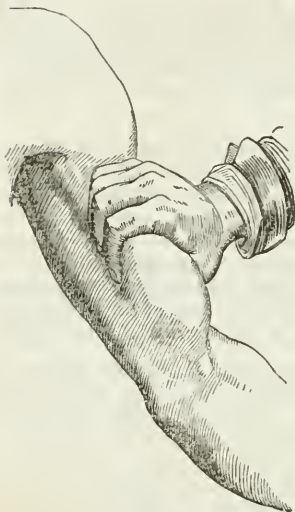


Fig. 21.



"On the upper extremity the circulation may be readily arrested with the fingers thus (fig. 20): if their points are properly placed over the artery, a very slight force suffices, and any part of the arm may be selected.

"In all amputations of the lower extremity, when such pressure is required, it had better be made on the brim of the pelvis thus (fig. 21): if made lower down much additional force is necessary; and, even then, is not always effectual. Occasionally the circulation is stopped in the leg by thrusting the fingers into the ham; but unless the patient be much emaciated, and considerable force is used, the plan is far from being a certain one. Some consider it advantageous to compress as near to the place of operation as possible, in the likelihood of less blood being lost than when done at a distance; the principle is a good one, when judiciously acted on; but, in attempting to put it into effect, care must be taken that no impediment is cast on the due performance of the operation,—as by preventing a proper retraction of the soft parts, and, also, that the pressure is not applied in a situation where it will be of little or no avail.

"In the generality of instances, I prefer having the pressure applied over the brim of the pelvis, considering that the ease and efficiency with which it is done, are fully equivalent to the loss of the small additional quantity of blood, intended to be saved by applying it lower down.

"In either the lower or upper extremity, compression may be applied in a variety of places, as will be afterwards explained in describing the different amputations and other operations.

Fig. 22.

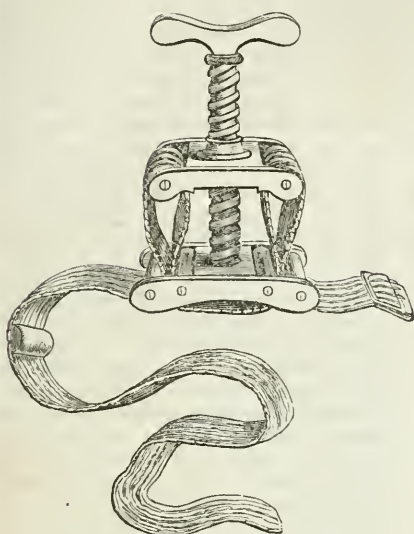
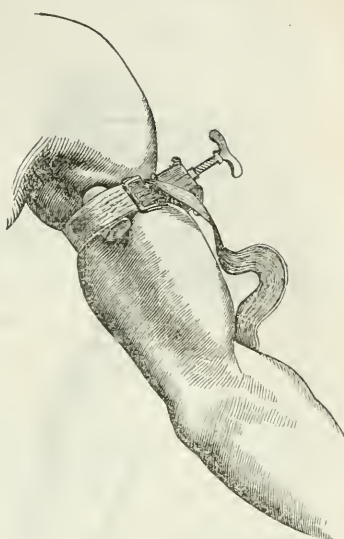


Fig. 23.

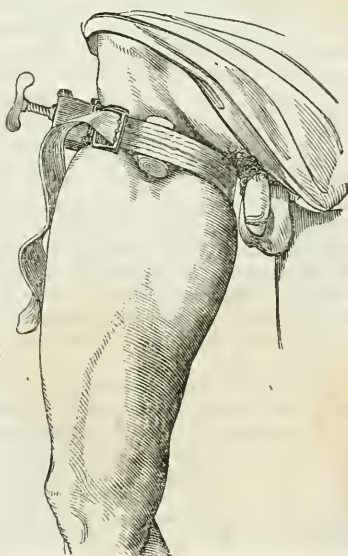


“For the purposes above alluded to, most surgeons prefer the tourniquet (fig. 22), as being in general more trustworthy than the fingers of assistants, which in protracted operations become fatigued and benumbed.

“On the upper extremity, the tourniquet is generally applied about the situation indicated in figure 23; but any other part between the arm-pit and elbow, may, according to circumstances, answer equally well.

“On the lower limb, the place usually selected for the application of this instrument is the upper third of the thigh, as represented in sketch 24. If amputation in the thigh is to be performed, it should be placed as high as possible; and it should always be remembered that its presence impedes the retraction of the soft parts. In amputations of the leg or foot, some place it on the lower third of the thigh, a large pad, proportioned to the depth of the popliteal space, being used on the occasion, and I give a decided preference to this situation in such operations.

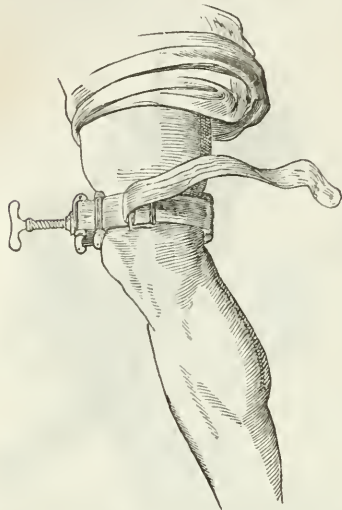
Fig. 24.



“If the instrument is properly applied at the knee, in the position represented in figure 25, amputation may be performed anywhere between the knee and ankle, without the loss of a single ounce of blood; and so far from the pressure being less effective in this situation than elsewhere, I deem it the most eligible of all the extent of the lower extremity, when the operation is to be done below the knee.

"The tourniquet may be applied to either extremity, as here exhibited, in the following manner: a pad, such as is seen in the sketch on the strap of the

Fig. 25.



instrument, may be used; or, what I consider better (such as exhibited in the other cuts,) a hard roll of calico, about two inches in length and one in thickness, is to be put on the skin over and parallel with the course of the main artery, and secured there by one or two turns of its free end; the strap of the instrument is then to be carried round the limb, and fastened by means of the buckle, when the requisite amount of pressure can be applied by turning the screw. The latter movement effects the separation of the two plates with which the strap is connected, and thus diminishes the circumference of that part which is round the limb, and at the same time forces the roller against the artery. If care be not taken in its application, there may be as much danger in trusting to this instrument as to the fingers; the strap must be strong enough not to break on the application of any reasonable degree of force. It seems to me of little consequence on which side the screw is placed: some prefer it over the main artery, others directly

on the opposite surface of the limb, but in any way the roller or pad must be directly over the vessel, and the buckle must not be so close to the plates as to come in contact with them, when the screw is turned. After the vessels are cut in an amputation, it is sometimes found necessary to apply additional pressure, which could not possibly be done were the buckle close to the plates. It is of consequence, too, that when the strap is fastened in the buckle, the screw should be immediately turned, for a very slight pressure round the limb, even that occasioned by the weight of the tourniquet, will retard the circulation through the veins, the superficial in particular; and thus, whilst the blood still passes, in its usual full stream, into the lower part of the limb, a considerable accumulation occurs in the veins below the instrument, and a larger quantity is lost during the operation than can be deemed in accordance with good surgery.

"There are other pieces of apparatus which may be used for the same purposes as the tourniquet, but the above, since its invention by Petit, has generally been considered the most perfect, and it is an instrument which every surgeon should have in his possession. Though he may dispense with its use, when surrounded by able assistants, and is himself possessed of great self-confidence, he may, on some occasions, have reason to regret that one has not been at hand; or even should this never be so, he will, at best, only display a degree of foolish vanity in his own resources or good fortune, if, in vaunting of his temerity, he attempts to bring into desuetude an instrument which has the sanction of the highest authorities, and which has been so long considered indispensable in the practice of surgery.

"Various pieces of mechanism have been used and recommended, as tourniquets; but I know of none worthy of superseding that just referred to. Of late, a very ingenious and simple foreign contrivance has been exhibited by some of our instrument-makers, consisting of two elliptical bars, joined at two ends by a kind of hinge, where they are so acted on by a screw, that the other two ends, which are properly padded and covered with leather, can be opened and shut at will. I have made some trials of this machine, but see no reason to alter the opinion above given, regarding the tourniquet.

"The fingers, or tourniquet, only afford temporary means of arresting hemorrhage; the open ends of the divided vessels must be secured with ligatures, which are to be applied in the following manner: Each artery which is not likely to cease bleeding without the ligature, is to be taken hold of with the common dissecting forceps, held in the right or left hand of the surgeon, drawn slightly out of its sheath, and separated from the vein or veins in contact with it, when a thread is to be tied round it by an assistant, a little beyond the point of the instrument, with a degree of tightness that will prevent the noose from slipping; and thus each vessel may be closed until nature effects its permanent obliteration.

"The thread for a ligature should be a small round cord of hemp or silk, about twelve inches long, possessed of sufficient strength to allow of some force being used in forming the knot; which should be tied in such a way that it will not loosen.

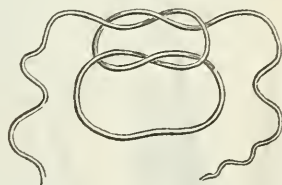
"The surgeon's knot, figure 26, as it is called, which is made by passing one end of the thread twice over the other, before turning each end back again to form the second noose, may be applied, but it seems little used by surgeons of the present day, perhaps in consequence of what was stated by Boyer, that Chopart, in the presence of some of the most distinguished professors in Paris, in operating for popliteal aneurism, could not completely restrain the flow of blood by tying the surgeon's knot; a second ligature was applied, and then a third, without success; when, after some deliberation, it was thought advisable to amputate, as it was supposed that the artery was so ossified, that it would not close with a ligature. On examination of the vessel after the operation, it was found in a natural state, and that the knots had not completely closed the canal.

Fig. 26.



"The sailor's or reef-knot, as exhibited in figure 27, when the noose and loops, of course, are drawn tight, will make all secure; but there can be no harm in casting a third turn of the ends, when there is the slightest apprehension of its slipping. One end of the thread should then be cut off, and the other left hanging out of the wound. In all instances where a wound is dressed with a view to union by the first intention, this plan is preferable to that of cutting away both ends of the ligature, close by the knot; and so far as my experience goes, I would rather even leave both ends, so that, as we remove them when free from the artery, the noose may be drawn out at the same time, than leave the noose to find its own way to the surface,—a process which is sometimes both tedious and troublesome, as well as the source of much anxiety and pain to the patient. Taking into consideration the injury inflicted, and the extent of wound when a ligature is required, I deem the presence of one, or even both of its ends, a matter of little additional consequence. I have on many occasions left both ends of a ligature on the main artery, hanging out of the wound (as in the operation for aneurism), without having had cause to regret doing so, and in instances where numerous ligatures have been applied, have had more trouble with some small part of the wound (perhaps the aperture of a stitch) than with the tracks of all the ligatures used. When a wound is expected to heal by granulation, both ends may be cut away; but even here, though I in general practise the plan, much annoyance may be caused by the noose remaining imbedded in the granulations.

Fig. 27.

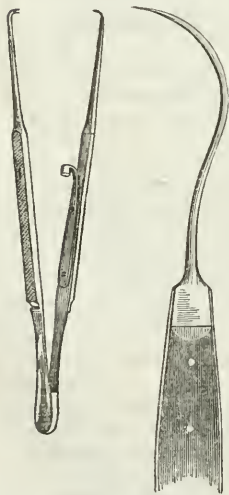


"The ligature which I generally make use of is small, smooth, and well-spun twine, which, as it comes from the shops, is sufficiently stiff, without the aid of

bees-wax, to permit a noose to be cast without trouble from the ends being too limber. Silk may be used, but it should not be supposed that the finer material produces less irritation in the wound; indeed I think that some practical surgeons have been far too nice on some points regarding the size and material of ligatures. In my own practice I am in the habit of using a greater number of ligatures than I know to be the custom of other surgeons, often preferring the thread to the chance of the vessel closing naturally, and I feel bound to say, that on no single occasion have I ever had reason to suppose, that any subsequent unpleasant occurrence has been in any way attributable either to the size or number of ligatures. I do not wish it to be imagined, however, that I am an advocate for thick ligatures, or for using more than may be reasonably deemed proper; but I decidedly recommend a substance of such a bulk that the person who uses it can, in the bustle of an operation, readily feel that there is something between his fingers. Fine dentist's silk I object to, on the latter account, and also because it may possibly cut the textures through altogether, instead of merely making a groove as the other does, sufficient to keep it in its place, until it is separated by nature. Mr. Lawrence recommended fine silk, with the object of cutting away both ends of the ligature, and leaving the smallest possible size of foreign substance (the noose and knot) in the wound; but although the objections stated above may be avoided, by great care and by not pulling too hard, I cannot see any particular advantage in the plan, even though the part left may not weigh more than $\frac{1}{20}$ or $\frac{1}{80}$ part of a grain. I must admit that, in my own practice, in removing both ends (for I have frequently done so), and more particularly in witnessing the practice of my former colleague, Mr. Lizars, who invariably removed both ends in all kinds of wounds, I have not in every instance seen bad results follow; on the contrary, I have seen wounds heal as kindly as could possibly be wished; but I nevertheless believe, that they would have healed equally well had the ends been left on. Sometimes the foreign substances probably remain in the wound, but much more frequently they are carried away in the discharge, either during the first healing of the wound, or by a subsequent process of suppuration. It may happen that a wound will at first close over a thread left in this condition; but, in the course of a few weeks or months, inflammation and swelling come on, then suppuration, and when the abscess is opened, or

Fig. 28.

Fig. 29.



bursts of its own accord, the noose will make its appearance. This result forms, in my opinion, the principal objection to the practice; if, for example, a patient, who has undergone an operation for a scirrhus mamma, be dismissed after the lapse of three weeks or a month, with the wound healed, and some time after, a painful swelling and suppuration occur in the cicatrix, she naturally supposes that there is a return of the original malady, and will not be convinced to the contrary until the abscess has closed; and as it may even then be uncertain if all the knots are away, (for they cannot always be seen, or may be overlooked in the discharges,) she may, during the lapse of a considerable period, still dread that she will again suffer in the same manner.

"Instead of the ordinary forceps, an instrument with a slide or catch upon it (fig. 28,) will occasionally be of service, when no competent assistant is near. When the artery is seized, the blades will remain shut, and the instrument may be allowed to hang till a ligature is applied. The catch may be so put on that it can be slipped out of the way or turned aside, to allow the instrument to be used, at the will of the surgeon, like the common forceps. Various ingenious contrivances exist to make this kind of forceps efficient and of general utility, all of them being modifi-

cations of the instruments used by Amussat in torsion of the arteries,—a method of arresting hemorrhage which, though it has been much practised on the continent, has never yet received the sanction of English surgery, and which seems to me to possess such trifling advantages over the ligature, as to induce me still to prefer the latter. The points of the forceps may be finished in the manner represented at p. 23, [fig. 6,] or they may be constructed as shown in the last sketch. [fig. 28]. The hook-like point is admirably fitted to seize and hold firm any object, such as an artery, and I have found these forceps, either with or without the catch, of invaluable service in removing small tumours from the neck, axilla, and other such parts, where it is desirable to draw the swelling well out, before using the knife to divide the textures behind.

"It sometimes happens that the vessels cannot be readily got hold of with the forceps, or cannot be drawn out of their sheaths, so as to allow a thread to be applied. A pointed hook or tenaculum (fig. 29) will then be of advantage; some even prefer it to the forceps on all occasions. The sharp point is thrust through the bleeding vessel and some of the surrounding parts (for we can scarcely include the artery alone, where the parts are condensed) and then raised, so that the thread may be tied beyond the convexity.

"Of these methods I give the preference to that with the common forceps, and either of them I consider superior, both in point of facility and security, to that of twisting the ends of the vessels till the blood ceases to flow. Torsion of the main arteries, to suppress hemorrhage, seems to be gaining few advocates among British surgeons; and, so far as my experience enables me to judge, I have never seen reason to change the opinion which I have above expressed: small vessels may, however, be advantageously treated in this way, and such a practice has been long followed among surgeons.

"In arresting the flow of blood to particular parts, as for secondary hemorrhage after amputations, or in the operation for the cure of aneurism, when the main artery is cut down upon at a distance from the disease, an instrument of this kind is generally used,—the common aneurism needle (fig. 30,) as here represented. Various sorts and shapes are recommended by different surgeons; but one like the sketch will be found most convenient for general purposes. The metal should not bend nor break with moderate force, and the eye should be near the point, which should not be so sharp as to endanger either artery or vein. The handle should resemble that of a common scalpel.

"When a ligature is applied to an artery, the nearer it is placed to the neighbouring textures, so much the better; great care should be taken, however, that none of these are included, particularly the veins and nerves; and, in operations for aneurism, the less an artery is disturbed in passing the needle and thread under it, so much the more favourable opportunity is supposed to be given for its permanent closure.

"In some rare and troublesome cases of bleeding, when the vessel or vessels can not be got hold of with the forceps, it is necessary in order to arrest the flow of blood, to pass a needle and thread through the textures on each side, so as to include some of the surrounding parts in the noose.

Common surgical needles, such as are here represented (fig. 31), may be used for this purpose, or one of this sort

Fig. 30.

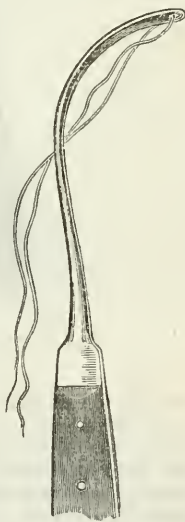
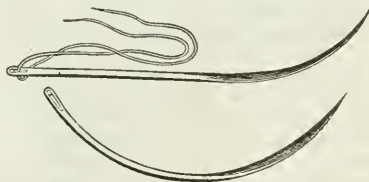


Fig. 31.



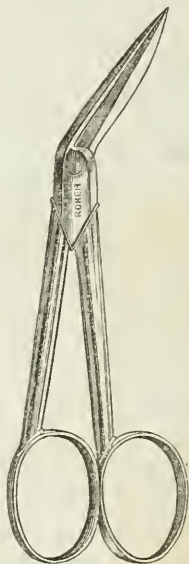
(fig. 32), set in a handle like that of the aneurism needle. If the parts be deep-seated and difficult to reach, the latter form will be most convenient, more particularly if some considerable force is required to pass the needle. In passing threads through small tumours, too, such as nævi and hemorrhoids, this kind will be found exceedingly convenient.

"When these means are resorted to, a little more than the bleeding vessel must necessarily be included in the ligature; and though, in general, this circumstance is of no great moment, the rule in surgery ought never to be forgotten, of including the bleeding vessels only, when such a proceeding is practicable.

Fig. 32.



Fig. 33.



"The end of each ligature should be cut with scissors, as when a knife is used for the purpose, however sharp its edge may be, it will drag out the end of the vessel, and, besides causing additional pain, may actually separate the ligature. The common dissecting scissors [fig. 5] will answer; but there may be danger in some cases from the sharp point, and such as those here exhibited (fig. 33,) which, for the sake of distinction, I shall call the surgical scissors, had better be employed. Their length should be between four and five inches, and the curve near the hinge will be found of advantage on many occasions."

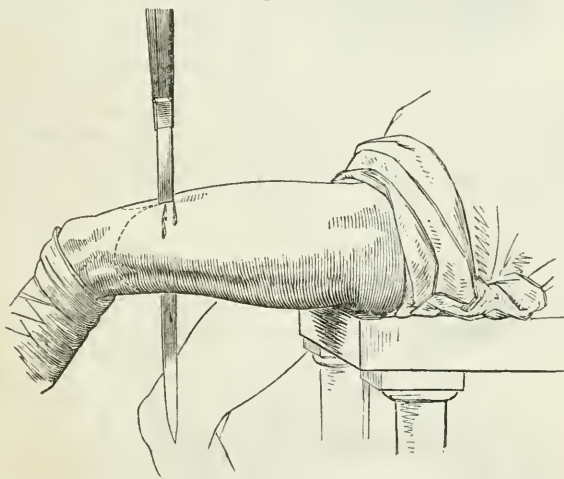
Our limits admonish us, that we must be satisfied with one extract more, and we shall take the account of amputation of the thigh. It is but justice to the author, however, to state that we are guided in this selection more by the space we have at command, than by any superior merit of this part.

"Amputation in the thigh may be performed in a variety of ways: perhaps the following, which is in most respects similar to that originally done by Vermale, may be found as efficient in every respect as any other, more especially in the lower third of the member. The femoral artery being commanded, as described and represented at pp. 33 and 35, [fig. 21, 24,] the surgeon, standing on the outside of the limb, should grasp the outer side of the thigh between his fingers and thumb, and having drawn them as it were from the side of the bone, should pass the knife from before backwards, or rather from above downwards, as it is here represented (fig. 193,) and then cut downwards and outwards so as to form

a flap, the extremity of which is pointed out by the dotted line on the outer side; next, the knife should again be introduced in front, and carried backwards in a line with its original course, but on the opposite side of the bone, when by cutting again downwards, and towards the surface, as partly indicated by the other dotted line, the inner flap is formed: both of them should then be drawn upwards with considerable force by the hands of an assistant, and an incision made round the bone, fully an inch higher than the place of transfixion: the saw should then be applied in the course of this last cut, and the separation completed by division of the bone. In transfixing, the point of the knife should be thrust directly down to the femur, with which it should then be kept in close contact as it is carried round to the opposite surface, and this process will be greatly facilitated by grasping the limb as directed.

"The assistant who has charge of the flaps should not forcibly elevate the one first made, as the knife is thereby prevented from passing readily across the limb the second time: he can scarcely, however, be too energetic after the other is cut in drawing both upwards, so as to give plenty of room for working the saw without rubbing against the soft parts. The femoral artery is not divided

Fig. 193.



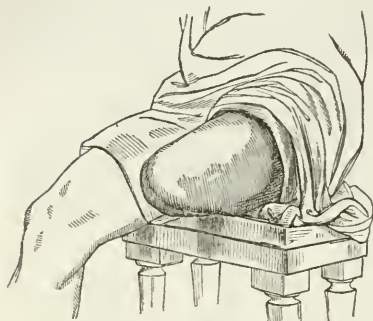
until the second flap is formed; indeed, Vermeil had this in view when he made his external wound first; but I do not think it of much consequence whether this vessel is cut across first or last, provided the surgeon takes sufficient care to have the vessel properly commanded above, or has sufficient self-confidence in the event of an accidental mistake, to grasp the limb, and thus whilst he may arrest the bleeding with one hand he can seize the vessels with the forceps held in the other. I deem the proposal of saving the artery to the last as of little consequence, and am generally in the habit of making the inner flap first instead of the outer, as I can thereby see the progress of the knife much more clearly during the second thrust.

"The next drawing (fig. 194) exhibits the appearance of the stump with lateral flaps. It will be found during the dressing, that care is required to keep the soft parts in their proper and natural position: they have a tendency to fall backwards, and thus the end of the femur comes nearer the anterior angle of the wound than it should be: moreover, it will be found in the course of a few weeks, that the parts behind are all more drawn upwards than those in front, and at last the bone seems to have a very scanty covering. To provide against the latter occurrence it may be well to leave the flaps a little longer behind than

in front, and for the former, the bandage, properly applied after the first ten or twelve days, will do all that is required, if the dresser is careful in keeping the soft textures well forward during its adjustment.

"In figure 193, the point of the knife is nearer the table than it should be on the living subject, for by passing it somewhat obliquely to the long axis of the femur the soft parts can be kept longer below (or behind) than they might be if transfixion were made at right angles. The young surgeon should remember, however, that if he slopes the knife in this way, and if the knee is much bent, as it often is in cases of white-swelling, there is a risk of thrusting its point into the calf of the leg below, as I have actually witnessed on the living body.

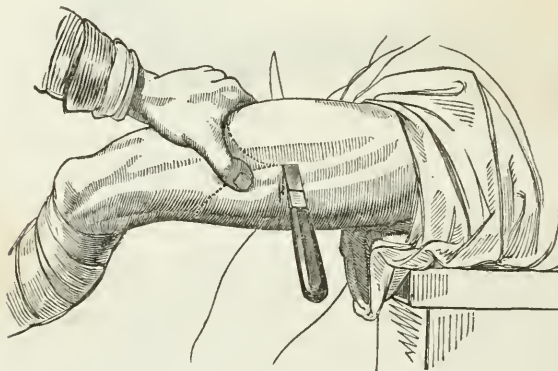
Fig. 194.



"The projection of the bone through the anterior part of the wound, when the amputation is above the middle of the thigh, has been found so difficult to counteract, in consequence partly of the

action of the psoas and iliacus internus muscles, and the weight and contraction of the muscles behind, as to induce most surgeons who practise the flap operation to select the covering from the anterior and posterior surfaces; in fact, it is now generally the custom with some operators to make anterior and posterior flaps in all parts of the thigh, and I have myself latterly often resorted to this

Fig. 195.

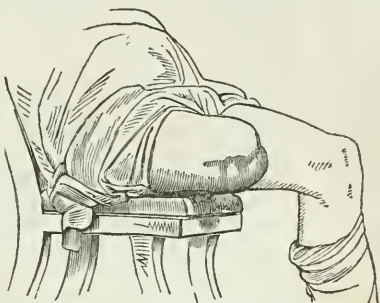


method, partly with a view to obviate the ill effects above referred to, but chiefly because I find it to possess an advantage over the other, which does not seem to have attracted so much attention as, in my opinion, it deserves. The operation I perform is as follows: grasping the soft parts, so as to bring them well forward, I push the knife across from the outside and form a flap in front; this being again slightly elevated I again carry the knife in the direction which it first took, but behind the bone, and form the second flap from the posterior surface, taking care to leave it at least an inch longer than the anterior: the rest of the proceedings are conducted as in the other operation. The dotted lines in the next cut (fig. 195) exhibit the comparative length of the flaps, and the seeming arch of the thigh has been accurately represented from nature. When the knife is thus placed, if the parts are fully drawn forwards as they should be, they

give this appearance of distortion, but the sketch was purposely taken in this stage of the operation with the object of illustrating this feature, and the manner in which the operator may employ his left hand when he stands on the left side of the limb about to be removed. If an operation of this kind is done towards the lower part of the thigh, it is impossible to make the anterior flap sufficiently large unless the skin and other textures are well elevated before the knife is applied.

"A moment's reflection on the anatomy of the thigh will be sufficient to convince any of the greater tendency to shortening of the muscles on its posterior surface than on the anterior: here, with the exception perhaps of the sartorius, which, however, will not be in the anterior flap if the amputation is low down, the only muscle likely to retract much is the rectus, but it lies so close to the bone, and, moreover, its fibres are so peculiarly arranged, that its sphere of contraction is but limited, when compared with that of those on the opposite side, where the semi-tendinosus, semi-membranosus, and biceps, with part of the adductor magnus, have so much scope, and are so far separated from the femur, that it would not, judging from physiological considerations only, be unreasonable to anticipate very considerable retraction. On the living body this actually occurs, and whatever operation is performed, unless some provision is made on this account, so that at first the parts behind shall be no longer than those in front, the stump after a time will never look well. I have now frequently performed amputation in thigh after this method, and can speak highly in its favour. The preceding figure (196), taken from a stump made in this way by my colleague Mr. Partridge, shows an ample cushion on all sides, with that prominence in front, formed by the end of the bone, such as is not unfrequently seen in stumps in this part of the limb.

Fig. 196.



"The femur is covered with such a mass of soft textures on its whole circumference, that, as I have already remarked with reference to amputations in the arm, the flaps may be taken from any opposite aspects, and I have frequently made them partly from the sides and partly from before and behind. Sometimes, as has actually occurred, it may be deemed requisite to have only one flap, and that may be taken from any side which is free from disease or injury. Dr. Little, of the Sligo County Hospital, has informed me of an instance in which he preserved a large single flap from behind,—the wound and cicatrix being thus, in some respects, like those after the single flap below the knee. Here possibly, as Dr. Little imagined, there may be an advantage in the cicatrix being in front of the bone, and thus less exposed to pressure whilst in the socket of a wooden leg. With such a flap I should cut away a considerable portion of the great sciatic nerve, so that it might not by any chance be brought to lie against the divided surface of the femur.

"I need scarcely add, that circular operations may be performed on any part of the lower limb; I shall not, however, describe any of them in particular, but will refer the reader to the introductory chapter on amputation, especially to that part where this mode of procedure is described. Although it is my opinion that casualties must follow circular operations more frequently in this extremity than those by flap, I feel bound to say, that I have seen stumps of an admirable kind after the circular mode, both in the leg and thigh. Perhaps the proper period to judge of the excellency of a stump is after the lapse of months or years, and the last case of the kind which has come under my notice is one below the knee,

(made, I believe, by my friend Mr. Rutherford Alcock in his Spanish campaign,) which will bear a comparison with the most finished performance by the flap.

"I have recommended the outside of the limb as being the best to stand upon in amputation of the thigh, and if the operation is to be done with the anterior and posterior flaps in the upper third of the limb, it will be found that if the knife is passed from within outwards, the other thigh will make it difficult to depress the hand sufficiently to enable the operator to elevate the point over the front of the bone; in short, he will discover that all the movements of his right hand will be very much cramped if he places himself between the patient's legs, or if, for example, in amputating in the upper part of the right thigh, he places himself on the patient's left side, he will find that what between the difficulty already referred to, and having to stretch across the patient's body, the whole proceedings are both troublesome and awkward.

"In any of these operations the superficial femoral artery will first demand attention as soon as the part is removed. The vessel is never difficult to discover, but sometimes, particularly when the transfixion is from the outside, it will be found split for an inch or more. In such a case, as well as when the artery is cut almost directly across, it must be cautiously separated from the vein with the points of the forceps, and slightly drawn out of its sheath, ere the ligature is applied. The *anastomotica magna* may require ligature in the lower third of the thigh, but in general the main vessel is either cut across or tied above this branch. Higher up the branches of the deep femoral may require three or four additional ligatures: but it is difficult to say how many may be necessary, for I have seen an instance where even the main vessel did not bleed, (the case was one of gangrene,) so that it was more choice than necessity that induced the operator to put a thread around it, and most practitioners of experience must have seen occasional examples where one ligature was sufficient, whilst in others eight, ten, or a dozen, may have proved not more than enough. In the upper part of the thigh venous hemorrhage will often cause annoyance, but it usually ceases as soon as the pressure in the groin is taken off, and invariably does so when the flaps are laid together. The point of the finger will here also (as in the leg) be of service for a time."

We must not close this notice without stating that the editor has contributed some valuable additions, and that the getting up of the work—the printing, paper and illustrations, which last are very numerous, are superior to anything of the kind that has issued from the medical press of this country.

ART. XX.—*Observations on the admission of medical pupils to the wards of Bethlehem Hospital, for the purpose of studying mental diseases.* By JOHN WEBSTER, M. D., one of the Governors. 3d edition. London, 1842, pp. 62, 8vo.

THE subject discussed by the author of this pamphlet is one of great importance, not only to the medical profession, but to all who may be afflicted with insanity.

Dr. Webster is a governor of one of the largest hospitals for treating insane paupers in the city of London, and from his official position has had his attention particularly directed to the subject. In the Essay before us, he argues very decidedly in favour of the general admission of medical students into the wards of the great hospitals of St. Luke, Hanwell and Bethlehem, for the purpose of studying mental diseases.

It must be acknowledged by every one, that the members of the medical profession at this day have little opportunity, anywhere, for acquiring a knowledge of insanity or of the best means for treating it. It is not an unusual occurrence for gentlemen to complete their collegiate course of instruction, receive their diplomas, and enter upon the practice of their profession, without ever having heard a single lecture or read an entire volume on the subject; without having

ever seen an insane patient or even placed a solitary work upon the shelves of their libraries for reference in cases of emergency.

Although most patients are ultimately treated in the wards of some institution specially devoted to this class of diseases, yet in nearly every location the primary treatment—the character of which may have a most important bearing on the duration and final termination of the case—is, and must necessarily be, directed by gentlemen engaged in general practice. The propriety of sending patients from home, often a most delicate and important question, must always in a great measure depend upon the opinion given by the medical attendant. These and questions of medical jurisprudence, sometimes involving the lives of individuals, and the happiness of whole families, are surely sufficient to demonstrate the importance of a knowledge of insanity being made a part of the regular education of every physician.

The only method by which this can be effected, is, as in other branches of medicine, by lectures, and by clinical instruction in those hospitals where pauper patients only are received. It seems now to be pretty generally conceded that all public institutions of this character, are bound to refund some of the cost of their management, by adding to the character and qualifications of those to whom the health of the community is to be entrusted, particularly, as, under proper regulations, no injury results to the sick from such a course.

In hospitals where insane patients pay for their board, Dr. W. very justly remarks, the community can have no claim, and that clinical instruction there is out of the question.

The first impression with nearly every one would certainly be, that a class of medical students passing through the wards of an insane hospital, could hardly fail to do serious injury to many patients, particularly to those under treatment and offering a chance for restoration. To prove that this result is an imaginary one and not confirmed by experience, Dr. W. states the fact that Esquirol delivered lectures at the Salpêtrière, in Paris, in 1819 and in subsequent years to large classes, who passed through the wards with him, and as he then declared, in many instances, with positive advantage to the patients. Subsequently M. Mitivié, also a physician to Salpêtrière, delivered lectures on the same subject, and M. Baillarger, of the same hospital, commenced a course of lectures on diseases of the mind, in 1841, including clinical instruction, and illustrated by patients treated in the Salpêtrière. "On these occasions, M. Baillarger used to introduce to the students the insane person upon whose case he lectured, and no bad effects ever followed these demonstrations." The director of the Salpêtrière was deputed by the Supreme Council of the Parisian Hospitals to attend all the lectures given by M. Baillarger, and to see whether the clinical illustrations were detrimental to any of the insane patients brought before the class. In his report to the Council is the following paragraph:—"From forty to sixty auditors usually attended the lectures, all in excellent order, and everything went on with the greatest propriety. The patients did not appear to feel any disagreeable impression from finding themselves in the presence of the public, and they had no direct communication with the students. In short, I can affirm that, in consequence of the precautions taken by the Council, and the prudence of the professor, the clinical conferences of M. Baillarger have been profitable to science without producing any inconvenience to our patients who were called upon to appear."

The inspector-general, M. Ferrus, when one of the medical officers of the Bicêtre, also gave lectures and clinical instruction at that hospital to large classes during several years, and notwithstanding the distance from Paris, the audience was very regular in its attendance. No less than 154 pupils were entered for the last course delivered by that physician.

Although all these attempts at clinical instruction in insane hospitals are stated on good authority, as having been highly successful and without the slightest detriment to the patients, it should be known, and is not a little remarkable, if so much good was effected with no evil, that in a country celebrated for its liberality in everything relating to hospitals, these courses should

have been interdicted by the council general of hospitals, and that at the time this pamphlet was written, there were neither lectures nor clinical instruction of any kind, in a single one of the insane hospitals of Paris.

For ourselves, we must acknowledge that we have always believed, and do still adhere to the opinion, that a large class of medical students passing through the wards occupied by insane patients must often be productive of serious injury to the inmates, and impair the quiet, order and discipline of the establishment. We are also satisfied from some observation on this point, that the students themselves receive little if any substantial benefit from these rare and hurried visits.

To learn much more of the treatment of the insane and of their peculiarities than can be taught in lectures or found in books, requires not an occasional visit, but a residence with them or in their immediate vicinity, when they can be seen at all hours and in the frequent changes of their disease.

A plan we should vastly prefer to the commonly adopted one, of taking a large class through the wards, would be, that such gentlemen as desired to have a practical knowledge of this class of diseases, should be attached to a hospital as resident students, and devote a portion of their time exclusively to this interesting branch of their profession. These should be graduates or advanced students and should be considered as a part of the corps of assistants, entirely under the control of the medical director, and personally assisting in everything required in the treatment and care of the patients.

The number that might thus be instructed would be very considerable, varying from 50 to 100 per annum for a single hospital containing 300 pauper patients. Under a proper organization such a hospital would contain six wards or divisions for each sex, and to each of these, under proper restrictions, from two to four residents might be attached. A term of six months thus passed, could not fail to impart a great amount of practical information on every form of insanity, and give a tact and ability in its treatment not otherwise to be obtained. The number of patients in each ward would be ample for purposes of study, students commonly erring by having too large a number of cases under notice at one time, in place of devoting themselves to the careful observation of a few. During the term, the residents might pass through every ward, and, if men of intelligence and of proper feeling, their intercourse with the patients could not fail to be of a highly advantageous character to both parties.

With these clinical duties, instruction by lectures should be combined; and a previous attendance on a course of lectures upon insanity might be made one of the requisites for the station of resident students.

We repeat, the subject is a very interesting one, and deeply concerns the public and the profession. Our space forbids more extended remarks in this place, but we trust wherever large and well organized hospitals for insane paupers exist, their medical officers will seriously consider whether their sphere of usefulness may not be much enlarged by offering clinical instruction to a portion of the profession, and if so, will endeavour to devise the most effectual mode of promoting so desirable an object.

T. S. K.

ART. XXI.—*Treatise on the Dental Art, founded on actual experience. Illustrated by two hundred and forty-one figures in lithography, and fifty-four wood cuts.* By F. MAURY, Dentist of the Royal Polytechnic School. Translated from the French, with notes and additions, by I. B. SAVIER, Doctor of Dental Surgery, pp. 293. Philadelphia, Lea & Blanchard, 1843.

THE above is the title of an interesting, highly valuable and well written treatise on dental surgery, embracing a broader and more extended view of the subject than is given by most writers upon this branch of the curative art. The work is divided into three parts: the first is devoted to "the anatomy and physiology of the mouth and its appendages," including the different structures that

enter into the formation of the anterior, posterior, lateral, superior and inferior walls of this cavity; as for example the tongue, maxillary bones, muscles, nerves, arteries, veins and glands; the teeth, together with a description of the manner of their formation, development, structure and eruption of both the temporary and permanent sets; also a description of the dental pulps and enamel, and the varieties of "form," "number," "position," "structure," and "consistency of the teeth." The author next gives a brief description of the diseases of the mouth, among which are enumerated "salivation," inflammation, and tumefaction of its glands; the effects resulting from first and second dentitions, including diarrhœa, constipation of the bowels and convulsions. He then treats upon "malformations of the dental arches," the various arrangements and all the diseases of the teeth—embracing accidental injuries from mechanical violence; erosion and discoloration of the enamel, and the different characteristics of caries, necrosis of the teeth, and exostosis and spina ventosa of their roots, &c. &c. Proceeding with the subject, he next describes the diseases of the alveolo-dental periosteum, inflammation, fungus and ossification of the dental pulp; "loosening," "luxation" and the "replacement of the teeth" in their alveoli; the various forms of odontalgia, "inflammation," "abscess," "aphthæ," "fistulous ulcers" and "adhesions of the gums to the cheek;" also, tumefaction and "ulceration of the gums;" the diseases to which this structure is subject in scrofulous and scorbutic subjects; the effects produced upon it by syphilitic diseases and those resulting from an excessive use of mercurial medicines, and concludes by some very appropriate remarks on tumours which occasionally originate here.

In the second part of the work, he treats on "dental hygiene and therapeutics," embracing a description of the means for the preservation of the teeth and all the other parts of the mouth; and here we would remark, that if these were better understood than they seem generally to be both by medical as well as by dental practitioners, and their employment oftener resorted to, the masticatory apparatus and its appendages would be less frequently invaded by disease. In the therapeutical part of the treatise, the curative indications of the various affections of the teeth and mouth are described. Full and ample directions are also here given for the extraction of teeth and the roots of teeth, together with a description of the various instruments employed for the performance of these operations.

The third part of the work is devoted to "mechanical dentistry, or a description of the various methods employed for the insertion of artificial teeth; every one of which is illustrated by one or more wood-cut engravings and lithographic plates. The value of this part of the work has been greatly enhanced by adding Dr. Solyman Brown's treatise on this branch of the art, which is admitted by all to be the most perfect of any extant, on the subject.

The original work, we believe, is held in high estimation in France by the medical as well as by the dental profession, and that it is one of merit, is proven by the fact that it has passed through six or seven editions, and Dr. Savier, the translator, has done himself much credit for the very correct English version he has given of it.

The information contained in the first and second parts of the work, should not only be possessed by every dental, but also by every medical practitioner, and more especially by those residing in the country and small villages, where the services of scientific and skilful dentists can seldom be had. C. A. H.

ART. XXII.—*A Treatise on Ruptures.* By W. LAWRENCE, F. R. S. &c. From the Fifth London Edition, revised, corrected, and considerably enlarged. Philadelphia, 1843.

THE work of Mr. Lawrence has been so long before the profession, and its great merits are so universally acknowledged, that we deem it unnecessary to do

more than mention the appearance of this reprint from the latest English edition. At a time, however, like the present, when a rage for cutting seems to have seized upon many of the surgical teachers of the country, and operations that are not absolutely demanded, and indeed even those of more than doubtful utility, are constantly performed, and heralded to the world, without the ultimate and too often injurious results to the patient, as well as to our science, being duly considered or made known to the classes witnessing them, we believe it a duty to let no fitting opportunity pass without putting in our caveat against them, and seize this occasion to cite the high authority of Mr. Lawrence in regard to one of the class of operations to which we have alluded, viz. that for umbilical hernia.

After quoting the statement of Desault in regard to the employment of the ligature in the treatment of this affection, he thus comments upon it:—"We cannot regard the preceding statement of the opinion and practice of Desault, as an impartial account of the result of general experience concerning the comparative merits of the different modes of treating umbilical ruptures. Having adopted and constantly employed the ligature, this great surgeon ascribes to it a safety and certainty of operation, which the experience of others has not confirmed; and he has not fairly represented the advantages of compression.

"I have attended carefully," says Scarpa, 'to the phenomena and success of this operation, performed sometimes by means of the simple ligature, sometimes by passing it through the tumour; and, after a very considerable number of practical observations, I feel myself authorised to say, that neither the one nor the other mode of operating is exempt from violent, and sometimes even dangerous symptoms; and that neither of the operations produces a truly radical cure, without the assistance of compression continued for several months after the wound is cicatrized. It is not so uncommon, as some surgeons have represented, for the operation to be followed by violent fever and very acute pain, which cause continual crying, and even convulsions. The separation of the slough is followed by an ulcer, large and difficult of cure, which becomes occasionally fungous and painful.'*

"Sir A. Cooper also objects to the operation, on the ground of its painful and occasionally dangerous consequences.

"It has been asserted† that the complaint returned, even in many of the cases operated on by Desault, and supposed by him to have been radically cured; and hence, after the subject had been fully debated in the Medical Society of Paris, the general determination was, that the ligature ought to be abandoned.

"Professor Benedict, of Breslau, treated several cases of exomphalos with ligature, applying it according to the directions of Desault. He found it invariably produce symptoms so serious, if not dangerous, that he has abandoned the method. "In all the cases, pain in the abdomen came on about the third day, with great tenderness to the touch, especially near the navel, and considerable fever, so that the presence of peritoneal inflammation could not be mistaken: in one instance there was also vomiting. All the patients recovered under anti-phlogistic treatment; but the symptoms were so formidable for two days, that a surgeon would not be justified in employing this treatment, unless all other measures had failed.'§

"Compression is altogether free from the painful and dangerous consequences, that occasionally follow the use of the ligature; and has been found by Richter, Cooper, Scarpa, and Semmeling, at least equally certain in its operation."

G. W. N.

* Mem. v. § 16.

† *On Crural and Umbilical Hernia*, p. 40.

‡ RICHERAND, *Nosographie chirurgicale*, tom. ii. p. 453; CARTIER, in the *Journal de Medecine*, tom. xli.

§ RUST, *Magazin für die gesammte Heilkunde*, vol. xlv. p. 176.

ART. XXIII.—*Elements of Materia Medica and Therapeutics*. By JONATHAN PEREIRA, M. D., F.R.S. and L.S., &c. &c. &c. With numerous illustrations. From the second London edition, enlarged and improved. With notes and additions, by JOSEPH CARSON, M. D., Professor of Materia Medica and Pharmacy in the Philadelphia College of Pharmacy, and one of the Editors of the *American Journal of Pharmacy*: 2 vols. 8vo. Philadelphia, Lea & Blanchard, 1843, pp. 714 and 800, 8vo.

UPON looking over the American edition of the *Materia Medica* of Dr. Pereira, we have seen no reason to alter the very favourable opinion of that work, expressed in former numbers of this journal, (see *American Journal of the Medical Sciences*, xxiv. 413, and N. S. i. 192.) We are glad to perceive that it has been republished here without curtailment. Independently of the injustice done to an author by putting forth abbreviated editions of his works without his superintendence or consent, such a course would, in the present instance, have been unjust also to the public, as one of the chief recommendations of Dr. Pereira's treatise is its almost encyclopedic copiousness. We turn to its pages with the expectation of finding information upon all points connected with *Materia Medica*, and would have good reason to complain were this expectation disappointed by the scissors of an American editor. Indeed, the main defect of the original work, in relation to American practitioners, was the want of sufficient notices of the medicines and preparations peculiar to this country. In the edition before us the defect has been supplied by the editor, Dr. Joseph Carson, who was in a high degree qualified for the task, and so far as we are able to judge from a very partial perusal, has executed it with judgment and fidelity. The nomenclature and preparations of our national standard have been introduced when wanting in the English edition, and many of our medicinal plants, either very briefly noticed or altogether omitted by Dr. Pereira, because unknown in Europe, have been sufficiently described. We must repeat the expression of our opinion that the work will be found an invaluable storehouse of information for the physician and medical teacher, and congratulate the profession in this country that it is now placed within their reach. G. B. W.

ART. XXIV.—*General Therapeutics and Materia Medica, adapted for a Medical Text Book*. By ROBLEY DUNGLISON, M. D., Professor of Institutes of Medicine, &c. in Jefferson Medical College of Philadelphia, &c. 2 vols. 8vo. Philadelphia, Lea & Blanchard, 1843, pp. 515 and 489, 8vo.

WITHIN the last ten years the American press has supplied the lamentable deficiency that existed for a very long time previously, in works upon the *Materia Medica*, a branch of the science of medicine, which from several causes had been neglected.

Among the prominent writers, who have contributed to place this subject upon a proper footing—is Professor Dunglison, whose ready pen has to a considerable extent been exercised upon it. The present work may be regarded as the third that has been put forth by him, viz. his *General Therapeutics*, *New Remedies*, and the *Treatise* under consideration. The first may be said to be only the prototype of the last, as they can hardly be looked upon as successive editions of the same work, for as indicated by the change of title the whole production has been so modified and amplified, as to answer more comprehensive and useful purposes than were designed in the first instance; yet as nothing has been curtailed of the original, but on the contrary such improvements made as the author's more mature reflection and experience suggested, it is presented in the twofold character of a revised edition, and of a new book. It now constitutes two large sized octavo volumes.

It is not within our limits to enter upon a critical examination of the contents of these volumes, or to comment upon any peculiarities contained in them. To stand upon their merit or demerit, in the estimation of his readers, the author is fully competent, as he has been long accustomed to the praise or censure which arise from community of views or difference of opinion as regards facts and deductions in medical science. In this age of independent thought and free expression, great latitude of judgment must be allowed; and where numerous topics are treated of, it is unreasonable to require that all should tally with our preconceived ideas, or be in unison with our prejudices. From his clear style, and long habit, Professor Dunglison is an adept in presenting a summary of the precise information possessed upon any subject that he may handle; of this the book before us is an example. The chapters upon general principles contain all that the student should know, without embarrassing his mind and taxing his memory with extended disquisitions, while the account of the individual articles under each class is succinct but sufficiently extended to convey accurate notions, with regard to their origin, source, qualities, uses and modes of application. It is gratifying to find that the author has assumed our own pharmacopœia as his standard. Since the revision of that work, the present is the first publication in which it has been adopted as the guide in the preparation of medicines. To enforce the importance of being directed by it, and diffuse throughout the community a respect for its authority, is the duty of all who have any interest in the advancement of materia medica and pharmacy.

J. C.

ART. XXV.—*Quarterly Summary of the Transactions of the College of Physicians of Philadelphia*, Nov. and Dec. 1842, and Jan. 1843.

THE principal articles in this No. are the annual Reports on Surgery and on Meteorology and Epidemics, the former by Dr. Isaac Parrish, the latter by Dr. Moore; and a case of croup communicated by Dr. Wood in which marked benefit followed the application of a tobacco cataplasim to the throat.

Dr. Parrish very justly reprobates the extravagance to which the rage for the division of tendons and fasciæ has been carried, and he might have included in his censure some other operations for the removal of deformities, which have been vaunted as the achievements of *modern surgery*.

Dr. Parrish claims for Dr. Ashmead the merit of having preceded M. Amussat by three months in the performance of the operation for artificial anus, and he gives the following account of Dr. Ashmead's operation from notes placed in his hands by the operator.

"The operation was performed 3d mo. (March) 15th, 1838, upon a female aged 37 years, who was affected with a scirrhus tumour of the rectum, causing complete occlusion during a period of several weeks. The pain and distress of the patient was extreme. The abdomen and flanks were enormously distended, and the least motion or attempt to eat produced extreme suffering. She took ix. grs. of sulph. morpheï daily, which produced but a slight mitigation of distress. In this condition, she eagerly desired the adoption of any means, which afforded a chance of relief, and the following operation was accordingly performed by Dr. Ashmead.

"An incision was made through the skin, extending from the last rib to the crest of the ilium, immediately anterior to, and parallel with the sacro-spinal mass of muscles—the subcutaneous cellular tissue and superficial fascia were next divided with the aid of a grooved director. Three or four large nerves, and two small arterial and venous trunks now presented themselves, crossing the wound within its interior half; the arteries and two of the nerves had to be divided, but no hemorrhage ensued, in consequence of the sudden retraction of the distended vessels. A layer of cellular tissue being now divided, brought into view a thin fibrous aponeurosis, which is the internal layer of the transversalis

fascia, given off from its posterior edge to the internal surface of the quadratus lumborum, and inserted at the roots of the transverse processes of the vertebræ. This tissue is of uniform appearance and thickness, lies next to the bowel, is attached to it by cellular tissue, and might readily be mistaken for peritoneum; behind it laid the bowel enormously distended, but not visible, owing to the intervening fascia. At the inferior angle of the wound the edge of the quadratus lumborum was divided, in order to prevent it from forming a pouch with the punctured bowel.

"Without dividing this aponeurosis, a large temporary ligature, in a strong curved needle, was passed through it, and the presenting portion of bowel, about an inch above the crest of the ilium, entering from behind, and brought out three quarters of an inch anterior to its point of entrance. A second ligature was immediately placed about one inch and a half above the first. The ends of these ligatures were now secured to the edges of the wound, on both sides, in order to fix the bowel firmly, and to prevent infiltration in the interstices of the divided parts or within the fascia. A small perpendicular opening was now made, by a bistoury, into the bowel, between the two ligatures, and enlarged by the aid of the director and finger to the length of one inch. Instantly a volume of gas and a small quantity of thin feculent matter escaped. All vomiting, spasm, and acute pain immediately ceased upon the opening being made. A piece of large flexible catheter was introduced about two inches up the colon, and secured by adhesive strips, (a measure which subsequent experience proved to be useless.) The application of simple dressings around the wound, and a soft sponge to its edge to receive the discharge, completed the operation.

"On the third day the catheter was removed, and the ligatures were withdrawn at the end of a week. As the wound contracted, its *posterior* edge was drawn towards the spine, while the surface next the abdomen, owing to the elasticity of the surrounding parts, was drawn along with it, so as partially to overhang the opening into the bowel, thus forming a sort of imperfect valve, and giving the opening an oblique direction, without at the same time interfering with the evacuations. The mucous membrane of the bowel was evolvuted, forming an elevated ring around the wound, which was extremely sensitive to the touch.

"The operation was followed by considerable prostration for three or four days, owing to the sudden removal of distension, but all vomiting and pain ceased, the patient was able to take nourishment, and slept comfortably, with but little aid from anodynes. The change was so striking and gratifying that her friends now entertained hopes of a recovery; but the abdomen continued larger than natural, though it was soft and flabby; at the end of ten or twelve days a diarrhœa set in, with loss of appetite and depressed spirits, and the patient sank on the sixteenth day after the operation.

"A post mortem examination, hastily made, revealed universal adhesions of the peritoneal surfaces of the bowels, with false membrane in some places one-eighth of an inch thick, limpid serum in the cavity of the abdomen, coats of the intestines so much thickened as to have lost their elasticity; no pus about the wound; the incision at least half an inch from the peritoneum, on either side of the bowels. Scirrhus of the rectum, four inches in extent, extending to the vagina, arteries, ovaries and bladder.

"Dr. Ashmead believes that his patient might have recovered, had not organic disease existed to so great an extent before the operation.

"The peculiar merit of this operation is, in penetrating the colon at a point where it is not covered by peritoneum, and where no important parts are divided; and in maintaining an opening afterwards without risk, and with much less inconvenience to the patient than in other situations. Dr. Ashmead arrived at this method of operating by a careful and laborious investigation of the relation of the parts on the dead subject; he found that the colon, in the right and left lumbar regions, was easy of access, at no great depth, and without the division, necessarily, of any muscular fibre or of any important nerves and blood-vessels, and that the posterior surface of the bowel could be opened, at this point, without interfering with the peritoneum.

"Dr. Ashmead was induced to investigate the subject from having witnessed, in Paris, an operation to form an artificial anus, in the left iliac region, in an infant, resulting in death on the following day; and having frequently heard of farmers thrusting a knife into the flanks of cattle, when bloated from eating fresh clover, he was induced to examine into the practicability of forming an artificial anus in this region, in man. It was not until two years after the performance of the operation that Dr. Ashmead heard of a similar measure having been proposed by Callisin of Copenhagen, in 1817.

"On the 2d of 6th month, (June,) 1838, Amussat, of Paris, performed for the first time an operation having the same object, though differing in several important respects from that executed by Dr. Ashmead."

"In the case of croup communicated by Dr. Wood, the disease had persisted for three or four days, notwithstanding the use of the most active remedies, as depletion, calomel, alternated with lobelia, &c. It was feared, from the character and violence of the symptoms, that the formation of a false membrane had actually commenced within the trachea, and the patient was considered to be in the most imminent danger. At this juncture the tobacco cataplasm was applied with the most happy effect. The spasm of the glottis was relaxed, the respiration became easier, and the patient was soon in a condition that gave good hopes of his ultimate recovery. Dr. Wood did not attribute the recovery in this case solely to the use of the tobacco cataplasm, but considered it a very important adjuvant to the other remedies. He was not in the practice of resorting to tobacco in ordinary croup; but in cases of extreme danger, where the remedies usually employed fail, the patient should not, in his opinion, be abandoned without giving this medicine a trial."

- ART. XXVI.—1. *Annual Report of the Board of Trustees of the Massachusetts General Hospital, for the year 1842.* Boston, 1843, pp. 37.
 2. *Third Annual Report of the Directors of the Maine Insane Hospital.* December, 1842, pp. 51.
 3. *Fourth Annual Report of the Directors and Superintendent of the Ohio Lunatic Asylum, to the 41st General Assembly.* December, 1842, pp. 88.

WE have before us annual reports for the year 1842, from the three well conducted and successful hospitals for the insane, named above. From the report of Dr. Bell, the able and zealous superintendent of the M'Lean Asylum, we learn that on the 1st of January, 1842, there were in the house 79 males and 63 females, total 142; received during the year 67 males and 62 females, total 129; making the number under care during the year 271, of whom 146 were males, and 125 females. Of these 138, viz. 65 males and 73 females, have been discharged or died, leaving 133 patients, 81 males and 52 females, in the house at the date of this report.

Of the discharges 80 were "recovered," 8 much improved, 12 improved, 20 not improved, 15 died, and 3 discharged as unfit; total 138. Dr. Bell's opinions of the statistics of insane hospitals, and the kind of return which he prefers, may be inferred from the following extract from his report:—"I have perceived no reasons to change the opinions, expressed in former years, of the absurdity and futility of any attempt to deduce, mark and tabularize the forms, causes, results or other circumstances connected with the insane. I still believe the so called statistics of insane hospitals, if carried into any detail beyond the simplest and most unimportant facts, and if unaccompanied with explanations touching almost every case, are, from their uncertainty and instability, deserving of no higher value than a system of *opinions presented with arithmetical notation*, calculated to mislead the public and amuse that part of the medical profession who have any practical acquaintance with the subject. With these convictions, the return which I should prefer to make to your Board would be the following:

	Males.	Females.	Total.
Number of patients at the commencement of the year 1842,	79	63	142
Received during the year,	67	62	129
Whole number under care,	146	125	271
Dismissed adjudged to have regained their ordinary state of health,	35	45	80
Removed by friends in accordance with their own views of expediency, after various periods of residence, from a few weeks to many years, some apparently convalescent and promising speedy recovery, others much improved in the manifestation of their disease, others improved by change of form in their symptoms, others ameliorated in manners and habits, others stationary and with no prospect of relief,	19	21	40
Died,	10	5	15
Three others have been deemed unfit subjects; one not having evinced such degree of disease as to justify his detention, one suffering under fever and another being merely intemperate and perverse,	1	2	3
Leaving at the end of the year,	81	52	133

As a part of the report is an interesting notice of the late Dr. Wyman, who preceded Dr. Bell in the situation of superintendent to the M'Lean Asylum, and who laid the foundation for the high reputation which this institution has since enjoyed, we append this sketch as being of interest to most of our readers:—"Dr. Rufus Wyman was appointed the first physician and superintendent of the asylum. No selection could have proved more fortunate for the new institution. Entering on his duties with no similar undertaking for an exemplar to guide him in interior arrangements or in general management, the weight of difficulty and responsibility which necessarily fell upon him must have been far greater than any of his successors in such trusts, who have had the aids of his ingenuity and labours, can have experienced. Indeed to this day scarce any institution can be visited in the land where evidences of the operations of his mind do not present themselves on every hand, not only in details of architectural and mechanical arrangements, but in the moral regimen and internal system. What is due to his memory as a public benefactor in this way can never be realized or appreciated except by the small number whose opportunities and duties enable to judge of the difficulties he encountered and the means he projected to meet them.

"The untiring interest and industry of Dr. Wyman, traits of character so fully shown that I must hereafter refer to them, presented on every hand their abundant fruits. Whatever was a part of the system he adopted was thoroughly matured and perfected; he established little for which he had not reasons, the soundness of which experience has verified; and it has rarely happened that any considerable variation has been made from regulations he introduced, that abundant causes for regret have not been afterwards found. Commencing with architectural arrangements which he had no hand in designing, much of his attention was necessarily called to devising changes and making improvements which under more favourable circumstances of beginning, would have been uncalled for. We still in our every-day experience have reasons to lament early errors and lack of information at the outset; although his ingenuity remedied many defects, others are beyond amendment. But wherever he placed his hand in perfecting old or designing new arrangements, the most abundant evidence is

presented how entirely correct were his principles of classification, inspection, interior comfort and safety. It may be, at times, that his inventive spirit was called into action beyond its most expedient limit. Difficulties were anticipated and obviated which experience proved too slight to demand precaution, and even his views of thorough classification and separation of different forms of disease and individual temperaments might have passed into a degree of complexity, difficult to be kept in constant operation. The end and aim of every arrangement, mechanical or moral, although not always obvious to the unpractised eye, speaks at once to those skilled and experienced in the care and treatment of the insane, the mind thoroughly imbued with sound principles.

"As a director of a hospital for the insane, Dr. Wyman was most happily adapted to the exigency then present, that is, the laying broad, deep and firmly a class of public charities before unknown in New England, and indeed scarcely to be considered as established in the United States. Possessing a mind of native intuitive sagacity in detecting character, he had thoroughly improved it by observation of men no less than by investigation in mental philosophy and medical science. These essential qualifications, matured by adequate preliminary experience in the ordinary duties and exigencies of his profession, having approached middle life when called to the direction here, were united with an untiring energy and devotion to the one great object of his life which scarcely will meet its parallel. Year after year passed away without ever finding him absent from the field of his charge even for a single night. Indeed, for some seventeen years, until his health failed under these labours and anxieties, he was scarcely absent from the hearing and sight of the insane. The last sounds of the closing and the first of the dawning day, brought to his ear the presence of his helpless charge and reminded him of duties which never grew wearisome to his spirit. This unexhausted application of course implied, for existence otherwise could hardly have been sustained, an undying devotion to the welfare of the insane; and he never, so far as can be judged, pursued this great end with diminished intensity of interest, amidst the discouragements which all places of trust, and perhaps none more than those connected with the care of those void of reason, occasionally involve.

"But it was not for mental qualifications alone that Dr. Wyman deserves to be remembered in his connection with the subject of insanity in the United States. There was a moral beauty in his character, a sterling uncompromising integrity in him as a director of a public institution, which may well serve as a model to all who may be called upon to discharge such sacred functions. Of him as a man in private life or in his social relations, I have no right to speak; that is a duty better appertaining to those who had more intimate and confidential relations with him than it was my privilege to have had; but the records he left as the head of this institution, and the knowledge I have continually received from those who came in contact with him, patients and their friends, authorize the declaration that in his relation to insanity he was emphatically a just man; honest not only in the great open duties of his station, but in those more minute and scientific details where any deviation or looseness as regards exactitude, any partial colouring or omission, could only be known to himself or incidentally to those who might come after him in his duties.

"There was in his character not only this strict integrity but a hatred of ostentation, an avoidance of anything which could be construed into self laudation, which perhaps was carried to an extreme actually prejudicial to the interests of this institution and thus to the insane generally. He had such a dislike to newspaper notoriety, such distrust of any form of reputation higher with the public at large than with his professional brethren, the sole adequate judges of character in a medical man, that perhaps the light of his good works was too much hidden under a bushel, to serve its proper end as an example. The effect of this unwillingness to publish widely what his institution had accomplished in its new and untried field, may have limited its extent of usefulness, and even have procrastinated the day, now arrived, for a more general provision for the insane. Had he allowed the report of the facts to have circulated far and wide or

encouraged the dissemination of what were then new and unheard of results, that insanity was a highly curable disease, many might have been led to have sought aid here who were permitted to suffer long and hopelessly, ignorant of the existence or the success of such an institution. A sensitiveness on this head perhaps morbid, if a failing, was one which 'leaned to virtue's side.'

"During the last year he has gone to his reward. I have no fear in hazarding the opinion that his professional character as a guardian of the insane, will continue established and unshaken by the lapse of time, as a reputation founded on a solid and indestructible basis. He never courted the breath of popular applause; his name will not drop, when its evanescent currents shall have passed by!"

From the report of Dr. Ray, of the Maine Insane Hospital, we have the following statements. On the 31st of December, 1841, the institution contained 36 males and 18 females, total 54; since which 50 males and 37 females, being a total of 87, have been received, making the entire number under care during the year, 141, of whom 86 were males and only 55 females. During the year 76 patients have been discharged, of whom 36 had recovered—16 were improved—18 had not improved, and 6 had died. A large portion of this excellent report is devoted to a discussion of the value of statistics as an indication of the success of different institutions—the deceptive character which they may assume unless accompanied by full details of the rules and regulations of each hospital,—and the difficulty always experienced in arriving at entire certainty in the forms of tables usually given. In his remarks on all these points, Dr. Ray's views are just and founded on correct principles. The whole report is well written, and can hardly fail to be of service to the community in which Dr. R. is located. We notice that Dr. Ray expresses a very positive opinion as to the insanity of Wood who murdered his daughter in this city in 1840—an opinion, which we believe we are safe in saying is not held by a majority of the profession in this section of country.

The report of Dr. Awl, of the Ohio Institution, also evinces much zeal and industry, and contains a large number of valuable statistical tables and judicious observations upon them.

At the end of 1841, this asylum contained 142 patients, of whom 74 were males and 68 females; 30 males and 35 females, a total of 65, have been admitted during the last year,—making the entire number under care 207—of whom 65 have been discharged or died—leaving 142 still under care at the date of the report. Of the 65 discharged, 41 had recovered; 13 were incurable, and 11 had died.

The house has been full during the whole year, and numerous applicants have been turned away for want of room. The propriety of additional buildings is strongly urged, and there is every reason to expect that the state will authorize a considerable extension of the asylum, at least sufficient to meet all the applications for the admission of recent cases.

Dr. Awl reverts to the suggestion which has been occasionally made, that a convention of the medical officers of the different hospitals for the insane in this country, by leading to uniformity in their reports, would be rendering great service to the profession, and promote the acquisition of an invaluable mass of statistical information. The suggestion is worthy of consideration by those at the head of these valuable institutions.

T. S. K.

ART. XXVII.—*The Northern Lakes a Summer Residence for Invalids of the South.*

By DANIEL DRAKE, M. D., Professor in the Medical Institute of Louisville. Louisville, 1842, pp. 29, 8vo.

THERE is a great number of valetudinarians and *ennuyés* in this country as elsewhere, who annually visit the different places of fashionable resort, some with the hope of getting rid of real, still more of imaginary complaints,

and others again with a view of pleasantly "killing time." If at the end of the season they find that their object has not been attained, they are still buoyed up with the hopes of its realization the following season, by a visit to another resort. In this way they soon go the rounds of all these places, and are compelled to try them again in succession, though with much diminished hopes. Dr. Drake has conferred a real boon on the class of persons in question, by pointing out to them an additional resource. This is afforded by our northern lakes, a tour of which offers the advantages of novelty, great variety, magnificent scenery, a pure cool air, and many historical associations of interest.

"An inspection of a map of North America will show," says Dr. D., "that this numerous and extensive group [our northern lakes] lie to the north of nearly all the states; their centre of gravity, the island of Mackinac, being in the meridian which separates Ohio from Indiana, cuts through the middle of Kentucky and Tennessee, and, dividing Georgia from Alabama, reaches the Gulf of Mexico between East and West Florida. The eye still being kept on the map, the inhabitants of the South may trace out the routes by which they can reach and embark upon the lakes. First, they who reside west of this meridian, should ascend the Mississippi and Illinois, to Chicago, on the western shore of Lake Michigan; or taking the course of the Ohio river, cross the State of Ohio by land from Cincinnati to Sandusky City, or by the canal from Portsmouth to Cleveland. Second, they who reside east of the central meridian, may cross the mountains to Pittsburgh, and make their way, either by land or water, to the town of Erie in Pennsylvania; or take the New York route to Buffalo, at the eastern end of Lake Erie, or that to Oswego on Lake Ontario.

"The eastern extremity of Ontario, of which Oswego is the 'seaport,' lies about one degree east of Washington City—Milwalke on Lake Michigan, and Navarino at the head of Green Bay, eleven degrees west; thus the voyage of the lakes extends through twelve degrees of longitude. Sandusky City, the most northern port of Lake Erie, is in latitude about $41^{\circ} 35'$; Gros Cap, at the entrance into Lake Superior, in lat. $46^{\circ} 29'$, giving a range between these parallels of five degrees. Such are the present limits, but when steamboats shall be placed on Lake Superior, which must be done at no distant time, the voyage will be extended many degrees to the west, and north to the 49th. As it is, the people of the South, from Louisiana to Carolina, may journey and sojourn, during the heats of summer, in a climate from 10° to 15° north of their own. The central lakes, Erie, Huron, and Michigan, either of which is more extensive than all the lakes of Europe taken together, are at present, and, indeed, will continue to be, the chief places of resort.

"The voyage from Buffalo to Chicago is more than 1200 miles; on which the traveller is carried by long stretches to the west, the north and the south, never out of sight of land on Erie, and not long on Huron and Michigan. During the three summer months, he will seldom encounter heavy gales; but from the shallowness of Lake Erie, it becomes agitated by gentler winds, and it is not uncommon for the invalid to experience the unwelcome benefit of a turn of 'seasickness.' When an occasional tempest stirs up the deeper waters of Huron or Michigan, a more formidable agitation, such as the Atlantic might not disown, arises, but this is of rare occurrence. Hence the dangers of a voyage upon the lakes are almost limited to fire, as sawyers do not exist, and rocks are scarce, while the ample 'sea-room' is an adequate guaranty against the fatal rencontre of boat with boat, which, on our rivers, destroys or cripples so great a number. From Buffalo to Chicago and Milwalke, there is a daily line of steam packets, not inferior in size, strength and convenience to any in the United States; from Buffalo to Navarino, at the farther end of Green Bay, a regular packet runs every fortnight, and from the same eastern port to the *Sault St. Marie*, 15 miles from Lake Superior, one or two boats go every summer. The whole of them touch at the Island of Mackinac, both going and returning. In addition to these, there are many small steamers running between all the intermediate ports of Lake Erie, Lake St. Clair and the beautiful river St. Clair, up to Fort Gratiot and Port Huron, in the State of Michigan, and Port Sarnia, in

West Canada, all at the lower end of Lake Huron. Some of these boats also ascend the Sandusky and Maumee rivers to their rapids, at Lower Sandusky on the former, and the towns of Maumee and Perrysburgh on the latter. From Sandusky City, from Toledo on the Maumee Bay, from Monro on the River Raisin, and from Detroit, railroad cars run from 30 to 80 miles into the interior of Ohio and Michigan; finally, at Mackinac and the *Sault* (rapids of the St. Mary), there are fur traders' skiffs, and birch canoes, with which French *voyageurs* and *Indians* are ready, at all times, to carry travellers along or across the numerous straits which there connect together the three greatest lakes of the continent. Thus, facilities for visiting every interesting locality, in and around these Mediterranean seas, are entirely within the reach of those who may embark upon their bosom."

The summer tourist will find much that is interesting and instructive in Dr. Drake's pamphlet.

ART. XXVII.—*Report of the Pennsylvania Hospital for the Insane, for the year 1842.* By THOMAS S. KIRKBRIDE, M. D., Physician to the Institution. Philadelphia, 1843, pp. 50, 8vo.

OUR No. for April last contains a very full account of this valuable Institution—a description of the buildings and grounds, an account of its organization, and the statistics for the year 1841. We shall glean from the report before us such facts as will continue its history up to the present time.

Since the publication of the article just referred to, "the contractor has completed the Lodges or detached buildings, for such patients as from habitual noise or other causes, were likely to prove an annoyance to those who resided in the main hospital. They have been occupied during the greater part of the year, and have been found to answer admirably, the purposes for which they were erected. Some of their inmates, even of the very worst class, have manifested a decided improvement in their habits, from the stricter classification, and more perfect supervision, to which they have been subjected.

"The arrangements for ventilation and for warming every part of these buildings, are believed to possess many advantages, and the airy and cheerful halls, which are used during the day, have contributed vastly to the comfort of those who occupy them,—have enabled us to dispense almost entirely with restraining apparatus, and made a resort even to seclusion, a comparatively rare occurrence.

"At the date of the last report there were 115 patients in the hospital, since which 123 have been admitted and 120 have been discharged or died, leaving 118 under care at the close of the year. Included in the admissions are 12 from the hospital in the city, who with 93 previously received from the same source, make a total of 105, who had been residents of the old institution. Of these 105 patients, one had been resident there more than fifty years,—one more than forty, and several, thirty, twenty, and ten years. Of the whole number received from the hospital in the city, 81 were considered decidedly incurable and not offering the slightest chance for restoration.

"The highest number in the hospital at one time since its opening, was during a part of the last month of 1842, being 127

The whole number of patients under care in 1842, was 238

Of those discharged during the year 1842, were—

Cured,	60
Much Improved,	11
Improved,	19
Stationary,	18
Died,	12

Total, 120

"Of the patients 'cured,' thirty-seven were residents of the hospital not ex-
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ceeding three months, twelve between three and six months, seven between six months and one year, and four for a longer period than one year.

"Of those discharged 'much improved,' six were under treatment not exceeding three months, two between three and six months, and three between six months and one year. Of the 'improved,' six were under care less than three months, seven between three and six months, five between six months and one year, and one for a longer period than one year.

"Of those discharged 'stationary,' five were in the house less than three months, three between three and six months, five between six months and one year, and six over one year. Eight of those discharged as stationary were demented patients, whose insanity was of very long standing, and five were removed without giving a fair trial to treatment.

"Among the premature removals were also five 'improved,' and five 'much improved.' Of the perfect restoration of the last five, there was no reasonable doubt, had their treatment been longer continued.

"The character of this institution will probably always cause us to report a larger or smaller number of premature removals. We receive all classes of insane persons, and have no authority to detain any, longer than is desired by their friends. Ignorance of the chronic character of the disease, caprice, or other causes, will frequently lead to removals, even before the expiration of the short period (three months,) for which board is always required, if a patient is taken away without being restored,—and some will constantly be found, who, contrary to their own wishes, are compelled to ask the discharge of their friends, from inability to bear the expense of supporting them in the hospital.

"Eight males and four females have died during the year. Of these deaths, one was from bronchitis, three from tubercular consumption—one from inflammation of the lungs supervening on tubercles—one from apoplexy—one from ulceration of the intestines—one from erysipelas—one from organic disease of the heart,—one was a case of meningitis,—one from gradual wasting of the powers of life, without apparent organic disease, and one was sudden, no lesion being discovered except an increased amount of serum in the brain.

Dr. Kirkbride enters into some statistical details to show how much the means of usefulness of the corporation have been extended, by the erection of a distinct hospital for the insane; and also presents several tables exhibiting the statistics of the hospital for the past two years.

To the report is appended some very interesting remarks on the importance of early treatment, on the economy of treatment in the first stage of insanity, on the visits of friends and others, on the avoidance of deception in treating the insane, and an outline of the treatment pursued in the hospital.

We commend this report to the especial attention of those interested in the subject.

ART. XXVIII.—*The Diseases of Females, including those of Pregnancy and Child-bed.* By FLEETWOOD CHURCHILL, M. D., Licentiate of the King and Queen's College of Physicians in Ireland—Physician to the Lying-in Hospital, and to the Adelaide Hospital—Lecturer on Midwifery, and Diseases of Women and Children, in the Richmond Hospital School of Medicine, &c. Second American Edition; with Notes, By ROBERT M. HUSTON, M. D., Prof. of Materia Medica and General Therapeutics, and formerly of Obstetrics and Diseases of Women and Children, in Jefferson Medical College, Philad.—Physician to the Lying-in Department of Philadelphia Hospital, &c. &c. Philadelphia, Lea & Blanchard, 1843.

ALL that is necessary in noticing the present edition of this very valuable work, is to refer to the favourable opinion formerly expressed of the original, (see Nos. of this Journal for August, 1839, p. 394, and Jan. 1841, p. 157,) and to add that the notes of Prof. Huston, though few and short, are pertinent and inculcate sound doctrines.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On Menstruation*.—M. BRIERRE DE BOISMONT, in his work "*De la Menstruation considérée dans ses Rapports Physiologiques et Pathologiques*," among a mass of interesting facts, gives the following curious table of ages at which menstruation commences. It is the most extensive table yet published, including the results of 2352 cases.

Age.	Paris, 1200 cases by Meniers.	Paris, 85 cases by Marc D'Espine.	Lyons, 432 cases by Petrequin.	Marseilles, 68 cases by Marc D'Espine.	Manchester, 450 cases by Roberton.	Gottingen, 137 cases by Oslander.
5	1	0	0	0	0	0
7	1	0	0	0	0	0
8	2	0	0	0	0	0
9	10	1	0	0	0	0
10	29	0	5	0	0	0
11	93	3	14	6	10	0
12	105	14	26	10	19	3
13	132	6	47	13	53	8
14	194	18	50	9	85	21
15	190	14	70	16	97	32
16	141	7	79	8	76	24
17	127	6	58	4	57	11
18	90	5	38	2	26	18
19	35	8	21	0	23	10
20	30	3	9	0	4	8
21	8	0	5	0	0	1
22	8	0	1	0	0	0
23	4	0	0	0	0	1
24	0	0	3	0	0	0

This table demonstrates that by far the greatest number of women begin to menstruate during their 14th and 15th year, and that the proportion diminishes both above and under that age.

As to the occurrence of *fluor albus*, it is mentioned that, in a fourth of the cases, this discharge preceded the appearance of the menses. In the greater proportion of the cases in which the *fluor albus* occurred, the women were fair,

with blond hair, and lymphatic constitutions, and were born in towns. After the establishment of the menses the author has seen leucorrhœa make its appearance in 248 out of 263 cases.—*Edinburgh Med. and Surg. Journal*, Jan. 1843.

2. *Relation of the Fallopian Tubes to the Ovary in the Mammalia.*—M. RACIBORSKI read to the Academy of Sciences, June 20th last, a memoir on this subject. M. R. states it to be a general rule, that the extremities of the Fallopian tube, in domestic animals, is so disposed during the act of fecundation, as to envelope the entire ovary, either directly by means of their open trumpet-shaped extremity, or mediately by the aid of their fimbriated extremity.

In women, on the contrary, the fimbriated extremity of the Fallopian tube embraces but a small portion of the ovary. M. R. thinks that this anatomical peculiarity, rather than mental emotions, is the cause of extra uterine conceptions being so much more common in women than in domestic animals, in which last indeed it is very rare.—*Gaz. Méd. de Paris*, June 25, 1842.

3. *Researches on Digestion.* By MM. BOUCHARDAT and SANDRAS.—By feeding dogs with pure fibre, killing them at different intervals after taking the food, and examining carefully the contents of the stomach, intestines, and the chyle itself, and comparing them with the appearances presented in dogs killed while fasting, MM. Bouchardat and Sandras have arrived at results which, while opposed to the usual belief of the physiology of digestion, seem to bear out the conclusions drawn by the illustrious experimentalists. They found that the fibrine was converted into a fluid in the stomach, was in fact dissolved. They found that the fluid did not pass into the intestines, or but a very small portion only, that all the truly dissolved matters were removed like other fluids from the stomach itself. That the matters which were found in the intestines of the animal killed when fasting were identically the same as those of the animal fed with a full meal of pure fibrine, only the latter contained a slightly greater proportion of fibrine in a dissolved or fluid state. The chyle, too, of the fasting animal presented the exact same qualities as that of the animal which had a full meal of fibrine, the proportion of dissolved fibrine in it was only very slightly greater.

It was found that the solution of the fibrine in the stomach took place by means of hydrochloric acid, and that the same process could be imitated out of the body by mixing a quantity of hydrochloric acid, so small as scarcely to affect litmus paper, in distilled water, and immersing in it a morsel of fibrine. After 12 hours, at the ordinary temperature, the fibrine was found converted into a gelatinous mass, which, if dissolved in distilled water and filtered, could not be recognised to differ in any chemical character from the fibrine found dissolved in the stomach of the dog. These experimentalists, therefore, regard the hydrochloric acid as the essential agent in the solution of the fibrine; and as the experiments of Hallé, Magendie, and other physiologists prove, that alcohol and other fluids, coloured and uncoloured, are removed directly from the stomach by means of the venous system, and cannot be recognised in the chyle while their presence can be detected in the blood, MM. Bouchardat and Sandras have no hesitation in stating, as the result of their observation, that the same takes place with the fibrine after it has once become dissolved.

They performed analogous experiments on dogs with gluten, and found the very same results were arrived at. It formed a solution in the stomach precisely similar to that of fibrine; was removed from the stomach in the same manner, without passing into the intestines in any appreciable quantity; and dissolved out of the body by means of water slightly acidulated with hydrochloric acid. Albumen and pure caseum underwent solution in diluted hydrochloric acid in the same manner, and furnished the very same reactions with chemical agents.

A number of other experiments were made on the digestion of starch, sugar, &c. from which it appeared that these substances all became converted in the stomach into lactic acid, and were removed from it directly in the same manner as the dissolved fibrin, gluten, &c. had been. The chyle of animals fed with

these non-azotized matters yielded no traces of starch and scarcely any of acid. In all animals the chyle was alkaline, or quite neutral. When dogs were fed on substances which they loathed, and would have vomited were the œsophagus not tied, the chyle was neutral, but when fed on bread or potatoes was always alkaline.

Experiments were also made on feeding dogs with fat. It was found that this substance was not altered in properties in the stomach, as pure fat was obtained from the pulaceous mass. The other liquids present in the stomach were acid, and contained hydrochloric acid. In the duodenum a yellowish-coloured emulsive mixture was found, with a neutral reaction, which yielded fat when washed with ether. The other small intestines contained also a similar matter, which furnished fat to ether. The thoracic duct furnished a white milky-looking chyle, much whiter than was ever seen in the former experiments, and when washed in ether furnished a notable quantity of fat.

These experiments seemed to prove that fat is digested in a very different way from the other nutritive matters; that it undergoes no change in the stomach, but that its chief changes occur in the duodenum; that, in fact, those changes occurred to it there which facilitated its absorption. These changes are, however, very simple. The pancreatic fluid and the bile mixing with the fatty matters, form a simple emulsion, without changing the chemical nature of the fatty matters. If these contain margaric and oleic acids in their natural state, they are saturated by the alkali contained in the pancreatic juice and in the bile. In this state they are absorbed by the orifices of the chyloferous vessels, and from thence carried into the thoracic duct, and mixed with the chyle. The analysis of the chyle proves this fact, and the examination of the contents of the bowels, at all parts of their course, prove that they contain fatty matters, which, if given in too large quantity, are even excreted with the feculent matters.

MM. Bouchardat and Sandras draw the following important conclusions from their experiments:

1. In digestion, the functions of the stomach consist in dissolving with the aid of hydrochloric acid, all albuminous matters, as fibrine, albumen, caseum, and gluten.

2. This acid, if diluted with 5000 parts of water, dissolves the same matters out of the body, provided they are not cooked; but if boiled the solution has no action on them. As they are found to be dissolved, however, in the stomach, it is probable that some other agent is at work than simple solution by means of hydrochloric acid: but the presence of that acid seems to be always indispensable.

3. As far as the albuminous matters are concerned, digestion and absorption take place exclusively in the stomach; the intestines present scarcely any traces of those dissolved matters which exist in such abundance in the stomach.

4. Solution of fecula also occurs in the stomach. This principle does not appear to pass into the state of sugar, and the experiments do not even warrant the statement that it passes into that of soluble starch; we regard as proved, its transformation into lactic acid.

5. The absorption of this kind of aliment seems to take place less exclusively from the stomach than that of the albuminous matters, a circumstance which would accord with the particular disposition and length of the intestines in animals not carnivorous.

6. Fatty matters are not attacked in the stomach. They pass into the duodenum in a state of emulsion, in consequence of the alkalies furnished by the liver and pancreas. This emulsion is found abundantly throughout the whole course of the intestines.

7. The chyle has appeared to be somewhat less abundant, but presenting similar characters in the animals which were killed after long fasting, and in those killed after being fed on copious meals of albuminous matters and of fecula. It has only presented a marked difference in those fed with fat, when this principle was met within it in considerable proportion.

Differing as these views do from those at present in vogue relative to diges-

tion, MM. Bouchardat and Sandras add a few remarks on the peculiarity of their views and the probable use of the chyliiferous system of vessels. It is to be remembered that they found that the chyle procured during the digestion of fibrine did not differ in a single character from that procured from an animal fed on fecula alone, or in a state of starvation. That, in fact, these matters had not been converted into chyle. One important fact they ascertained to be was, that these chyliiferous vessels absorbed the fatty matter, but this cannot be their sole use. During digestion a large quantity of hydrochloric and lactic acids are secreted and thrown into the stomach. These acids must come from the decomposition of salts existing in the system—chloride of sodium and lactate of soda. The abdominal glands prepare for the chyliiferous vessels and thoracic canal, a chyle, the alkalinity of which is greater in proportion to the acidity developed in the stomach; and thus chyle, which is not solely produced by the absorption of aliments, but by a process of true secretion, mixes with the blood, to neutralize the acid which was indispensable for the solution of the food in the stomach. This simple process allows the blood to be continually repaired, without appreciably changing its nature.—*Edinburgh Med. and Surg. Journal*, January, 1843, from *Annales des Sciences Naturelles*, Oct. 1842.

4. *Decussation of Fibres at the base of the Brain*.—M. FOVILLE points out, what all admit, that the extent of the decussation of fibres commonly demonstrated between the corpora pyramidalia is not sufficient to account for the completeness of the paralysis of one side of the body when the other side of the brain is impaired. "There is no proportion as to size, between their discussing fibres and their point of origin, the crura cerebri, or their termination, the anterior fasciculi of the spinal cord." He has succeeded however in demonstrating "a decussation at the commencement of the spinal cord, not through an extent of a few lines only, or by only a small number of filaments, but through the whole distance which separates the basis of the crura cerebri from the medulla spinalis properly so called."

The anterior columns of the cord, when arrived at the medulla oblongata, separate from the middle line to give place to the corpora pyramidalia, and at the level of the tuber ascend and pass at right angles over the uppermost of its arcs. The posterior columns on the other hand pass outwards from the apex of the columns going to the crura cerebelli, and leave exposed the anterior fasciculi, which are then visible behind through the whole length of the floor of the fourth ventricle, and along the aquæductus sylvii to the infundibulum.

The crura cerebri, for their part, form, from above downwards, a section of a cone, of which the fibres, instead of taking a straight direction, are turned spirally, and successively approach the median fissure into which they penetrate and plunge into the inner part of the anterior fasciculi of the medulla spinalis. The fibres from the right crus thus pass into the prolongation of the left anterior fasciculus, and *vice versa*. Along their course, the crura constantly giving off fibres which pass thus from one side to the other, gradually grow thinner, and at their exit from their tuber they constitute only the base of the anterior pyramids. The same circumstances continuing they become finer and finer till their very apices decussate at the boundary between the medulla spinalis and medulla oblongata. The transference of all the elements of the crura cerebri from one side to the other of the nervous axis is thus completed.

The mode of demonstrating this arrangement is to separate the two lateral portions of the nervous axis from the apex of the calamus to the infundibulum by separating the borders of the median groove. When this is done gently, each half may be seen to furnish an infinity of fibrous fasciculi of various size, which pass across the interlacing with each other.—*British and Foreign Medical Review*, January, 1843, from *Bulletin de l'Académie de Médecine*, August, 1842.

5. *Termination of Nerves*. M. MANDL, in a memoir read to the French Academy of Sciences, on the 11th July last, directed attention to the three following points:—1st, That at whatever age an animal is examined, the nerves

are always seen to end in loops. 2d, Nerves of young animals are not always provided with a sheath. When the parenchyma is forming during the development of an animal, it commences by the production of some corpuscles between the primitive fibres of the fasciculus, so as to separate one or more of the elementary fibres from the rest of the fasciculus. In proportion as the corpuscles are developed, the primitive fibres, which at first were only slightly separated from the direction of the fasciculus, become more and more apart, so as to form at last a true loop. From these observations, it would appear that the number of primitive fibres in old and young animals is the same, as M. Mandl has never been able to discover any fibre dividing into two. 3d, The retina is composed of two portions. The internal, or that next the vitreous fluid, is composed of the same elements as the gray substance of the encephalon, the other, the external or white portion, besides the vessels and the expansion of the optic nerve, contains the particular elements which the author calls small rings (*baguettes*.) These are placed obliquely, and are from 1-100th to 1-50th of a millimetre in length in birds, and 1-300th in breadth. At their outer surface there is an oily globule of a yellow or red colour, whilst their inner is terminated by a very fine filament.—*Lond. and Edin. Month. Journ. Med. Sci.*, Dec. 1842.

6. *Structure of the Nervous System*.—M. MANDL read to the Academy of Sciences of France, a memoir on this subject, of which the following are the conclusions. The centro-spinal nerves, according to the author, are composed of transparent fibres, running in a parallel direction. They undulate, but never anastomose with each other. At the external border of each line, an internal one is seen, so that these primitive fibres may be named filaments, with a double outline. Their diameter varies from 0.05 to 0.02 of a millimetre. From acting on them with water and other reagents, the external line appears to belong to a sheath, enclosing the internal one. This latter, which was transparent at first, becomes coagulated from the reagents used, and assumes a globular form, giving rise to the erroneous opinions of authors on the globular nature of the nervous structure. The white substance of the brain consists of filaments with double outline, which decrease in diameter as they approach the gray substance. The thinnest fibres, which have only a diameter of from 0.001 to 0.002 of a millimetre, do not show a double outline. The globular or beady form seen, is owing to the destruction of these fibres, which are very soft.

The nerves contain many fibres of a single outline, from 0.003 to 0.004 of a millimetre in diameter. A nerve is never composed entirely of one of these classes of fibres,—they are always mixed together; but there is a preponderance of one or the other, according to the nerve examined. The anterior and posterior roots of the spinal nerves have no distinctive character under the microscope. The contents of the encephalon contain several distinct elements, as the gray and white matter, and the “corpuscules gris et ganglionnaires.” From his researches, he concludes, that the nervous system is composed of two portions, a white and gray; that each of these consists of a centre and periphery; that the central portion of the white matter is found in the white substance of the encephalon and spinal marrow, and its external or peripheric part in the centro-spinal nerves; that the central portion of the gray matter is found in the gray substance of the nervous centres, and its peripheric part in the ganglionic system. In both divisions the elementary fibres are most distinctly recognised in their respective peripheries. Each part of the nervous system contains fibres of the other portion.—*Lond. and Edin. Month. Journ. Med. Sc.*, and *Gazette Médicale de Paris*, 11th June, 1842.

7. *Development of Bone*.—M. FLOURENS read a paper on this subject to the French Academy of Sciences, Nov. 7. He first mentioned that he had formerly been in the habit of believing that the medullary membrane of bone only possessed the power of absorption, but that now, from his own experiments, it was evident that it also *produced* bone. He found that when the periosteum of a duck was destroyed, it grew again, but that the medullary canal was obliterated

from the new bone having been thrown out by the inner periosteum; that in those experiments in which either the whole external periosteum, or only a portion of it had been removed, the inner membrane was invariably found thickened at the points corresponding to those at which the external periosteum had been removed. If the internal membrane was destroyed, new bone was always thrown out by the external one. The other experiments which he made were performed on various animals, and they consisted in placing rings of platina wire over the periosteum of the tibia. The animals were killed at periods varying from 28 to 40 and 80 days after the experiment, when the platina wire was found more or less covered by periosteum and bone.—*Lond. & Edin. Med. Journ. Med. Sci.*, Dec. 1842.

8. *Precocious Menstruation in a Girl two years old.* By Dr. CARUS, of Dresden.—Examples of precocious menstruation are by no means rare; but there are few recorded which can be compared with the present case. Christina Theresa, a natural child, was born in the mountains of Saxony; neither her father nor mother were of robust constitution. She was scarcely a year old, when she began to grow rapidly. At the end of her second twelve-month, the catamenia appeared, and have continued ever since to flow regularly once a month. The Academy of Medicine of Dresden sent both for her and her mother, and in order to examine more particularly into the case, kept them under their observation during several weeks. The infant was 37 inches 3 lines long. The mammae were firm, like those of a strong girl of 16. Her body was stoutly made, and the genital organs were covered with dark-brown hair. Her physiognomy and tone of voice were childish, which contrasted singularly with the strength of her body. Her intellectual functions were equal to those of a child three years old, and her head was covered with beautiful dark-brown hair.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Dec. 1842, from *Allgemeine Zeit. für Chirurgie*.

9. *Third Dentition.*—One of the daughters of the Countess Z. had her milk teeth renewed at the age of six. Nothing remarkable was observed during the first dentition, the permanent teeth having in the usual manner replaced the first set. When the patient had attained the age of twelve, to her own and her parents' equal distress, the incisors fell out. Their places were however soon observed to be filled by new teeth; and at the end of twelve months, all the teeth that she had gotten between the ages of six and twelve had been replaced by others.

Examples of third dentition are not rare in the annals of medicine; but the cases recorded (with the exception of one) differ from the above in this, that they were always in old people, and that the third dentition was confined to one or two teeth.—*Ibid.* from *Gaz. Méd de Paris*, 18th Sept. 1842.

10. *Man with three Testicles.*—Dr. F. MACANN gives an account of a man with this malformation. The supernumerary testicle was on the right side, within the scrotum, between the groin and the proper testicle of this side; with which, however, it did not seem to be in immediate contact, but to be suspended, as it were, by a shorter cord, or hung up in a separate sac; in fact, it seemed as if it had dropped from the abdomen after the other, but had not been permitted to fall so low in the scrotum as to touch it. In consequence of this arrangement, the lower testicle was not at all pressed upon by the upper.

On the left side the spermatic cord was perfectly natural in all respects, and was easily traced from the groin to the testicle to which it belonged.

On the right side, however, the cord was much thicker than natural at its upper part, where, in fact, it consisted of two cords, one of which was distinctly traced into the upper testicle on this side, and the other, much longer, into the lower testicle. And it is to be particularly noted that in each of those parts, as well as in the cord on the left side, the hard spermatic vessel, (*vas deferens*) could be distinctly felt, like a piece of whipcord between the fingers. The three

testicles, therefore, were, to all appearance, perfect and similar to each other. — *Edin. Med. and Surg. Journ.*, Jan. 1843.

11. *Origin of Fibre—Structure of Fibrine and of False Membranes.*—It has been commonly supposed that fibrine only presents an organized appearance when its coagulation has taken place in contact with the living tissues. In his notes and appendix to Gerber's Anatomy, Mr. GULLIVER has described and depicted a most distinct structure in fibrine which has coagulated after death, or after the removal of the blood from the body; and a similar character was shown in a false membrane. He now gives several more figures to show the analogy of structure in false membranes and fibrine coagulated as above-mentioned. This structure is made up of fibrils of extreme delicacy and tenuity, and of corpuscles possessing the characters of primary cells or organic germs.

Of late years the origin of fibre, as well as of all other tissues, has been ascribed to the growth of cells; but these observations render it probable that the mere extension of the parietes of cells is not essential to the formation of all textures, since fine fibres or fibrils are found in fibrine which has clotted even out of the body.

"Mr. Gerber (Gen. Anat. figs. 16—18,) has delineated what he terms the first, second, and complete stages of *fibrillation* in the progress of organization in the fibrine composing coagulable lymph; but he does not say how much his drawings are magnified, though in some of them a very low power must have been employed. Others are sufficiently enlarged to show the cells, from which he says the fibres are formed, and this is precisely the point in which my observations are at issue with the views now generally entertained concerning the origin of fibres.

"All the organic tissues, says Dr. Schwann, however different they may be, have one common principle of development as their basis, viz. the formation of cells; that is to say, nature never unites molecules immediately into a fibre, a tube and so forth; but she always in the first instance forms a round cell, or changes when it is requisite, the cells into the various primary tissues as they present themselves in the adult state.

"How is the origin of the fibrils which I have depicted in so many varieties of fibrine to be reconciled with this doctrine? and what is the proof that these fibrils may not be the primordial fibres of animal textures? I could never see any satisfactory evidence that the fibrils of fibrine are changed cells; and, indeed, in many cases, the fibrils are formed so quickly after coagulation, that their production, according to the views of the eminent physiologist just quoted, would hardly seem possible. Nor have I been able to see that these fibrils arise from the interior of the blood discs like certain fibres delineated in the last interesting researches of Dr. Barry."

As formerly observed by Mr. Gulliver, (App. to Gerber's Anat. 17.) Dr. Macartney's view of the healing process is supported by the observations on fibrine. Now it is known that a clot of this substance, which has coagulated quite independently of inflammation, is a curious and complicated structure, in other words really organized, even as much so as false membranes are at first, it may be readily granted that inflammation is rather hurtful than salutary in the reparation of injuries, and, indeed, altogether unnecessary to the cure of wounds, contrary to the opinion so long entertained by the school of Hunter.—*Edin. Med. and Surg. Journ.*, from *Lond. and Edin. Phil. Mag.*, Oct. 1842.

12. *Existence of Lymphatics in pseudo-membranes.*—Mr. HAMILTON was shown by Prof. Vanderkolk of Utrecht, some preparations showing the existence of lymphatics in new and abnormal parts, such as the effusions and adventitious membranes which inflammation often leaves between the separate layers of serous membranes, and where beyond dispute, they must be newly-formed lymphatics in parts themselves new. "The first preparation," says Mr. H., "placed in my hand was of this nature. The pleura, on its sacral aspect, had been inflamed, had thrown out coagulable lymph, which, by a considerable bridle,

connected it with a part of the diaphragm. 'The surface of this connection was not less than an inch or two in extent, and the bridle varied from a quarter of an inch to an inch in length. The lymphatics of these parts having been injected with quicksilver, the vessels of this system belonging to the lungs and pleura were very conspicuous; not less so those of the diaphragm; and thirdly, not less apparent than either, were distinct beaded lymphatics running along the effused membranes connecting the two normal tissues. As in this portion of the pleura, so it was equally conspicuous in another preparation—a case of lymph effused between the pleura costalis and pulmonalis, the bridle crossing like a regular bridge, and in this evidently adventitious membranous bridge were the lymphatics coursing their way as conspicuously as in the other parts.'—*Lond. Med. Gaz.*, Jan. 6, 1843.

MATERIA MEDICA AND PHARMACY.

13. *Elective action of Medicines*—M. Coze, Dean of the Faculty of Medicine of Strasburg, communicated to the French Acad. of Sciences on the 10th of Oct. last, the results of some experiments made by him on certain classes of agents employed in medicine.

He concludes 1st, that volatile substances introduced into the system, have a tendency to be eliminated by those organs which in a physiological state secrete gases or vapours, as for example the lungs and skin.

2. That substances which contain principles, the same as those which naturally form part of a secretion, are eliminated by the organs which perform this secretion.

3. That substances which enter into the composition of an organ, when given as a medicine are carried to that organ.

4. That among the substances which do not naturally enter into the composition of the solids or fluids of the animal system, there are some whose actions obey, what may be called their general chemical character; thus acid substances are eliminated by acid secretions.—*Gaz. Med. de Paris*, Oct. 15, 1842.

14. *Absorption of Medicinal Substances*.—M. MIALHE arranges into two classes all substances capable of being absorbed. In the first, he includes all those which cannot form an insoluble compound with the albuminous elements of the blood, such as the alkaline oxides, their carbonates, and several of their other saline compounds; the oxygenated compounds of arsenic and antimony; the hydrocyanic and carbonic acids; ammonia; all the neutral gases; almost all the vegetable acids; all organic bases; and the greater part of colouring and odoriferous substances. These all act immediately on the nervous system, and pass quickly into the urine. In the second class are comprised all those which can form an insoluble compound with the albuminous elements of the blood. These are, the inorganic acids, a great many metallic salts, as of iron, copper, lead, mercury, silver, tannin, creasote, &c. They never act directly on the nervous system; and their action is so much the slower, as the albuminous compound which they produce at first is less under the solvent influence of the soda and alkaline chlorides which are contained in the different fluids of our body; and it is only after having been submitted to the agency of these, that they pass into the urine. The general principles given in the paper explain satisfactorily a number of questions relative to the absorption of different substances which formerly it was difficult to understand.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Dec. 1842.

15. *Abuse of Purgatives*.—It has been maintained by physicians in the East Indies, and in our southern and western states, that purgatives and calomel were not only essential to the treatment of the diseases of warm climates, but that it was necessary to administer those remedies in doses which have been regarded by the practitioners of more temperate regions as not only extravagant

but absolutely injurious. The following remarks by Drs. SAMUEL RODGERS and ALEX. LORIMER, the able editors of the *Madras Quarterly Medical Journal*, show that the medical practitioners in the East are awakening to the fact that the extent to which they have employed those remedies is pernicious, and we hope that our brethren in this country will have their eyes opened to the same truth.

"In all the diseases of this country, [East Indies,] however trivial, nay, even in the diseases of infancy, the strongest purgatives are prescribed—particularly mercurials. But as we daily see indications of a better mode of practice creeping into use, the scruples of calomel, being by many practitioners changed for small doses of blue pill and other mild purgatives, we are in hopes that as

‘Opinionum commenta delet dies,’

we may live to see the day when this pernicious practice shall be altogether discarded; and that the real meaning of the terms ‘the use and abuse of purgative medicines,’ shall be more thoroughly understood.”—*Madras Quar. Med. Journ.*, Oct. 1841.

16. *Liquor Taraxaci*.—A very elegant preparation has been introduced under the above title, and which, from the strong taste it possesses of the recent root, has been much used by medical men who have confidence in the remedial power of dandelion. The following formula has been communicated to us:—

Dandelion roots, perfectly clean, *dried*, and sliced, 18 ounces.

Infuse for 24 hours in a sufficient quantity of cold distilled water to cover them.

Press and set aside, that the feculæ may subside; decant and heat the clear liquor to 189° F., so as to coagulate the albumen; filter the liquid whilst hot, and evaporate in a drying room, or by means of a current of warm air, (a water or steam bath will not succeed so well,) until the product shall weigh 14 ounces. To this must be added four ounces of rectified spirit. Should the roots not have been perfectly cleansed, the product must be digested with pure animal charcoal. If properly prepared, *Liquor Taraxaci* resembles in colour pale Sherry, and possesses the acid taste of the fresh root in an eminent degree. The dose is from one to three fluid drachms.—*Annals of Chymistry*.

17. *On the Preparations of the Citrate of Iron*. By M. MIALHE.—The *Journal of Chymistry* gives the following formula for the preparation of the citrate of iron:—Take of crystallized citric acid, three parts; hydrated peroxide of iron, two parts; distilled water twelve parts. Boil together until the oxide is completely dissolved; then filter and add enough of water to replace what has been evaporated, and make up twelve parts of fluid. If we wish to obtain the citrate dry, a layer of the fluid is placed on a square of glass and evaporated in the stove. The citrate of iron thus obtained is of a fine rusty red colour; dissolves perfectly, though slowly, in water; is of a strongly acid taste, astringent, and slightly styptic.

Within the last few years—that is, since the citrate of iron has been introduced as an article of trade—two very distinct varieties are to be found in chemists’ shops. One presents the characters just mentioned, and is the pure citrate of the peroxide of iron. The other is the preparation of a very different kind, it dissolves much more quickly in water, and the solution, instead of being a yellowish red, is of a yellow green colour; its taste is rather alkaline than ferruginous; in a word, it is a double citrate, containing a greater or less proportion of soda or ammonia.

Now, as it seems clear that these two preparations must possess different medical properties, I think that physicians would do well if they would distinguish, in their prescriptions, the acid from the alkaline preparation.

Effervescing Chalybeate Water.—Water, 625 scruples; dry citrate of iron, 1 scruple; citric acid, 4 scruples; bicarbonate of soda, 5 scruples; add first the citrate of iron and citric acid; then the bicarbonate of soda, taking care to cork the bottle at once, and secure the cork.

This latter preparation has very little metallic taste, and is quite as agreeable

as the Vichy water; when mixed with wine it does not render it turbid as Vichy water does, and is certainly a more active remedy.—*Bulletin de Thérapeutique*, August 15, 1842.

18. *New Alkali extracted from Quinquina*.—M. MANZINI read to the French Academy of Sciences on the 18th of July, a memoir on the chinchovine, a new alkali extracted from quinquina.

The quinquina Jaën of commerce, which is the white quinquina of La Condamine, and the bark of the cinchona ovata of the Flora of Peru, has been always considered as destitute of the febrifuge properties of the other barks, and in consequence has been rejected for medical use. M. M. says he has never been able to discover in it either quinine or cinchonine, but he has been able to detect a new vegetable base, which he calls chinchovine, or quinvine, (from cinchona, or quina ovata.) This substance is prepared exactly in the same way as quinine. It appears in the form of prismatic crystals of a long shape, white, inodorous, and of a bitter taste; from their little solubility, they are some time in being developed. It is very soluble in alcohol, more especially if it is warm, less so in ether, and almost totally insoluble in water; weak acids dissolve it, and form salts, which in general crystallize easily;—these are very soluble even in weak alcohol, more so, however, in cold than in hot. They are precipitated by the alkalies and their carbonates, and the chinchovine is separated from them by the ioduret of potassium, the bichloride of platinum, the chloride of gold, and other metallic chlorides. Ammonia also throws down the salts of chinchovine, and sets their base free; a part only, however, of the chinchovine is precipitated in the insoluble state; and this is more especially the case, if the excess of ammonia is considerable, for a part of the base remains dissolved in the ammonia, and as this evaporates, the rest of the chinchovine is deposited in crystals. That portion also of chinchovine which was thrown down in an amorphous state, gradually changes into a crystalline mass of dazzling white mother-of-pearl lustre. Two or three days are required before this appearance is visible. The alcoholic solution of the chinchovine is very bitter. It restores the blue colour of litmus when reddened by acids, and turns the syrup of violets green. When it is submitted to a temperature of 150° , its aspect and weight remain the same, but if it is exposed to a heat of 188° , it melts into a liquid of a brownish colour, without being volatilized. As it cools, it assumes the appearance and colour of rosin; its surface is cracked; in this state its weight is the same as before fusion, and if it is subjected again to heat, it melts at the same temperature. When fused and cooled, the chinchovine is equally soluble in boiling alcohol, and is deposited also in crystals. When exposed to 198° , it is quite decomposed, furnishing empyreumatic products of a very fetid odour, and a quantity of carbon. These experiments show that the chinchovine is completely anhydrous.—*Lond. and Edin. Monthly Journ. of Med. Sci. and Gaz. Méd. de Paris*, July 23, 1842.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

19. *Frequency of a second attack of Smallpox*.—M. SERRES stated to the Academy of Sciences at the meeting on the 4th July last, that from an observation of between 17 and 1800 cases of smallpox in his private practice and in the hospitals, he could declare that cases of a second attack of smallpox were as numerous as of attacks of smallpox after vaccination. These facts lead M. S. to think that there are individuals who are born with a predisposition to contract smallpox twice, as there are others born to have it only once.—*Gaz. Méd. de Paris*, 9th July, 1842.

20. *On Abnormal Nutrition (commonly called Inflammation), and on the mode in which its different Products are developed, as Softening, Suppuration, Granulation, Reorganization of Tissue, Morbid Growths, &c. &c.*—Dr. J. H. BENNETT, in a communication read to the *Medico Chirurgical Society of Edinburgh*, commenced by alluding to the well-known fact, that the blood circulating to every part of the living organism, carried with it the principles of nutrition. These appear to exude through the minuter vessels dissolved in the liquor sanguinis or blood plasma, which constituted a blastema or formative fluid for the formation of nucleated cells. The cells thus formed, underwent different kinds of development, some being formed into bone, others into muscle, nerve, tendon, filamentous tissue, and so on. The insensible formation and development of these cells constituted healthy nutrition.

This process might be deranged, or rendered abnormal, in various ways: *1st*, from an increase or diminution in the whole mass of the blood; *2dly*, from a greater or less change in the relative amount of its different chemical constituents; and, *3dly*, from mechanical and other causes acting more especially upon any part of the frame. It was to the phenomena accompanying the latter condition that Dr. Bennett was desirous of directing the Society's attention. These were rapidly described, as they have been observed by numerous authors, and confirmed by Dr. Bennett, viz. *1st*, Contraction of the capillaries, and diminished velocity through them of the flow of blood; *2dly*, Dilatation of the capillaries, and diminished velocity of the blood's current; *3dly*, Oscillation of the column of blood, and encroachment on the lymph spaces; *4thly*, Complete stagnation of the blood, the red corpuscles crowded together in an amorphous mass, and brought into immediate contact with the vascular walls.

During the latter stage of this process, or at its termination, three circumstances might take place: *1st*, Effusion of serum; *2dly*, Exudation of blood plasma; and, *3dly*, Extravasation of blood by rupture of the vessel.—The object of the communication was to describe the changes which followed exudation of the liquor sanguinis.

The blood plasma on being exuded from the blood-vessels, might remain fluid for some time, and would then be necessarily reabsorbed. Vogel and Vogt refer to cases where on cutting across small cavities in the brain, the fluid they contained immediately coagulated. More frequently, however, instead of remaining fluid, the blood plasma coagulates. When this has once occurred, it undergoes changes, which vary in different cases, before it can be reabsorbed or removed from the system. The material exuded constitutes a blastema for the formation of nucleated cells, which generally, though not always, vary in character according to the nature of the tissue in which the exudation takes place.

In parenchymatous organs, the liquor sanguinis usually coagulates in the form of granules, which may be seen coating the vessels, and filling up all the space between the ultimate tissue of the organ. By this process, the organ affected is rendered perfectly dense or hepatized. After a time, or during the exudation, nucleated cells, (*exudation corpuscles*), are formed, which vary in size from 1-100th to 1-25th of a millimetre in diameter. They become filled with granules from 1-500th to 1-700th of a millimetre in diameter. The cell wall then bursts, and the granules escape. By means of this process, and the development of the exuded mass more or less into cells, it is broken up, and rendered fluid. Thus the morbid state in organs, named *softening*, is produced.

The exudation corpuscle may be distinguished by its undergoing no change on the addition of acetic acid. Ether and caustic potash entirely dissolve them; liquor ammonia renders them soft and easily broken down.

On the surface of serous membranes, the exudation generally passes into cells and very minute fibres. These cells, (*plastic corpuscles*), are transparent, from 1-100th to 1-75th of a millimetre in diameter, formed of a delicate wall, containing granules 1-1000th to 1-600th of a millimetre in diameter, varying in number from 3 to 12. They are not perfectly round, but somewhat irregular in form. The mode of formation of the minute fibres is unknown. Gulliver has pointed out that they are not the result of cellular development.

The plastic corpuscle may be distinguished by its wall contracting, and the edge becoming thicker on the addition of acetic acid. The shape is also rendered more irregular; it is dissolved in ether and caustic potash, and not affected by water.

In the skin, loose cellular tissue, &c., the exudation commonly passes into cells, usually from 1-100th to 1-120th of a millimetre in diameter, perfectly round, with a defined edge, containing several granules, and sometimes a round nucleus. These cells, (*pus corpuscles*,) swim in a fluid, roll freely on each other, are of a yellow-greenish colour, and constitute the organized part of the fluid universally known as *pus*. They are not formed from the exudation corpuscle, or epithelial cells, as has been supposed, but arise primarily from the exuded blood plasma.

The pus corpuscle may be distinguished by its swelling out and becoming more transparent on the addition of water; by the cell wall being dissolved, or nearly so, in acetic acid, whilst the nucleus is rendered more distinct in the form of two or three granules, generally from 1-300th to 1-400th of a millimetre in diameter. They are dissolved in ether and concentrated alkalies.

The exudation, plastic, and pus corpuscles, although most commonly formed in the situations referred to, are not exclusively so. The pus corpuscle may sometimes be formed in parenchymatous tissues, and exudation corpuscles in cellular tissues. Sometimes they may be more or less mixed together. Thus the plastic and exudation corpuscles are commonly formed in the lung, and exudation corpuscles may frequently be found swimming among those of pus.

The exudation may also pass into *organization of tissue*, apparently by the same process as takes place in a state of health. Should it exist in small quantities, and further exudation be checked by bringing the divided parts into apposition, reorganization of tissue occurs *rapidly*, and *union by the first intention* is established. On the other hand, when this process takes place *slowly*, a state called *hypertrophy* is produced.

When loss of substance is occasioned, the exudation passes partly into organization of tissue, and partly into pus corpuscles, by means of which a *granulating surface* is produced. A fungous granulation examined under the microscope, exhibits all the stages of development presented by cells, passing into fibres, as figured by Schwann. Externally these are covered with pus corpuscles. As the former increase the latter diminish, until at length a normal tissue is reproduced, or a dense fibrous mass denominated *cicatrix*.

Lastly, the exudation may be transformed into nucleated cells of different shapes, round, oblong, caudate, stellate, more or less square, &c. &c., either mixed or unmixed with fibres, constituting the different kinds of morbid growths, as indicated by Müller.

Thus in the same manner as in a state of health, cells originating in the effused liquor sanguinis, may undergo different kinds of development, as into fibre, muscle, nerve, &c., constituting *normal* nutrition; so in a morbid state cells originate in the exuded liquor sanguinis, which are transformed into exudation, plastic, pus cells, tumours, &c., constituting *abnormal* nutrition.

Dr. Bennett agreed with Andral and Magendie in considering that the term inflammation was inapplicable to the explanation of the phenomena he had described. He pointed out how the cardinal symptoms of inflammation, pain, heat, redness, and swelling, were partly dependent on the exudation, and partly on the congestion which preceded it. He had even seen some cases of encephalitis, where the central parts of the brain were softened, and contained numerous exudation corpuscles, although during life no pain or heat, and after death, no redness or swelling had been observed.

Inflammation, therefore, was only a part of one great morbid action occurring in the frame, which might be denominated abnormal nutrition, and more especially that species of it dependent on increased exudation of liquor sanguinis.

Numerous authors had referred inflammation to increased nutrition or secretion. Dr. Alison more especially seemed to consider this essential to the inflammatory process, (*Lib. of Med.. Art. Inflammation.*) Before the doctrine of cyto-genesis was established, however, nutrition of parts was invariably con-

nected with vascularity, and pus was considered an unorganized fluid. At present we must regard pus, lymph, softening from exudation, &c., as being highly organized, and resulting from an active process of nutrition. Hitherto increased nutrition, as connected with inflammation, has been mere hypothesis; Dr. B. stated, that it was the object of his communication to *demonstrate* its correctness. —*Lond. and Edin. Month. Journ. Med. Sc.*, Dec. 1842.

21. *Researches into the composition of the Blood in Typhus Fever.*—M. de RENZI took advantage of an epidemic of typhus fever, which occurred in March and April, 1841, and raged with general severity,—the most severe and frequent phenomena being those of affections of the brain, the malady at its commencement sometimes assuming the character of apoplexy,—to pursue his researches into the composition of the blood in typhus, and the following are the results of his investigations in a large number of cases. He agrees with Andral and Gavarret —1. That the clot is usually soft and oleaginous. 2. That the fibrine is in smaller quantity than in healthy blood. 3. The globules are increased in quantity. 4. The cruor is readily dissolved in the serum, colouring it red, and being precipitated from it in the form of a powdery sediment. The hematosine has little coherence with the globules and the fibrine.

In addition to these observations already advanced by the French physicians, M. de Renzi adds other equally important characters. Thus, in addition to the increased quantity of globules, and their easy separation from the colouring matter, they appear to be deprived of their central nucleus, and seem less compact, less solid, and so to speak, less alive. In the second place, there exists in the blood during typhus fever a peculiar odour, as if it had undergone the commencement of putrefaction.

In spite of the occurrence of all these alterations, M. de Renzi does not profess that the cause of typhus fever exists uniformly in a change in the composition of the blood; this is regarded by him as only one of a great train of symptoms. We must equally take into account the nervous lesion characterised by stupor and muscular prostration, as well as the alteration in the intestinal mucous membrane.

M. de Renzi considers these researches into the composition of the blood in typhus to give a satisfactory explanation of many of the phenomena occurring in the course of this disorder. We know that M. Magendie found hemorrhages and congestions to occur in animals in proportion to the degree in which he diminished the quantity of fibrine in their blood; and M. de Renzi thinks we may, by analogy, attribute to the diminution of fibrine in the blood during typhus the following symptoms, which are of so frequent occurrence:—1. The tendency to congestions in different organs, which scarcely bear the name of inflammations. 2. The hemorrhages and effusions of blood into internal cavities. 3. Small interstitial sub-epidermic and submucous hemorrhages, forming spots, suffusions, petechiæ, &c.—*Gaz. Méd.*, from *Il Filiatre Sebezio*.

22. *State of the Blood in Scurvy.*—A communication on the disorders resulting from defective nutriment, from Dr. BUDD, of King's College, published in the "Medical Gazette," contains some interesting information on the state of the blood in scurvy, derived from recent analyses. Our early writers have stated that the blood in this disease is loose and dissolved, and the most distinguished of modern physiologists have given the same opinion in more precise language, stating that the globules are dissolved in the serum. Such, however, is not the case. The serum is not tinged with the colouring matter of the blood, and the globules examined under the microscope present no perceptible change. Even in advanced stages of scurvy the blood separates into serum and clot as rapidly and as perfectly as healthy blood, and in some cases the clot is very firm and much buffed and cupped—the consequence, perhaps, of a diminished proportion of the globules to the fibrine.

The analyses made by Mr. Busk show that the proportion of hematosine is much diminished, while that of fibrine, of the albumen, and the salts, is in-

creased. Thus may be readily explained the general paleness of the tissues and the tendency to swoon; but the spongy state of the gums and the great liability to hemorrhage remain to be accounted for. On this point Dr. Budd thinks that if, as the origin of the disease seems to show, the fault of scurvy-blood is deficiency of some of its constituents, the most probable supposition is, that this deficiency is in the salts; that some saline principle, small, perhaps, in amount, but important in agency, and necessary for the nutrition of some tissues, is wanting. The tissue that seems to suffer most is that of the small blood-vessels, which become weak and easily ruptured, in all probability from defective nutrition. The opinion that the cause of these symptoms is saline deficiency is supported by considering the source from which the principle wanting may be restored—viz. the succulent juices of vegetables and fruits. These juices—the preservatives and specific remedies of scurvy—contain albumen, fibrine, and organic acids in combination with inorganic bases. Their virtues cannot depend on their albumen or fibrine, because these are in excess rather than in default in scurvy-blood. They must depend on some of the incidental principles with which the albumen and fibrine are associated. The radical importance of such principles, both in plants and animals, has been well shown of late by Prout, Liebig, and other chemists, and might have been inferred from the constancy of their presence, and from the fixed proportion which certain of them bear to the other constituents of particular tissues.

The principle, whatever it is, is common to the juices of a great variety of vegetables and unripe fruits, and appears to reside in the juices of the plant only. It seems to be much impaired or destroyed by desiccation, by the action of a strong heat, and the process of vinous fermentation. The antiscorbutic properties of some fruits, as the guavas, seems also to vary with the degree of maturity. The unripe fruit proved on experiment to be the more serviceable. The acetous fermentation appears in no degree to impair the anti-scorbutic virtue. Pickles have equal efficacy with the fresh plant; sour kroust made by subjecting sliced cabbages to the acetous fermentation long had great celebrity as a preventive of scurvy. It would appear, indeed, that the principle may even be developed by the acetous fermentation, as *sowens*, an acetous preparation of oatmeal, was considered by Sir J. Pringle and Sir G. Blane as a powerful preventive of scurvy, while it seems well established that oatmeal itself has no such virtue. The pure organic acids are less efficacious than the juices from which they are derived.

From all this it is probable that the principle wanting is a salt which enters the system only in combination with the organic acids.—*Provincial Medical Journal*, Dec. 31, 1842.

23. *Cyanosis from a rare Malformation of the Heart.*—JAMES DOUGLAS, Esq. records in the *London Medical Gazette*, Sept. 30th, 1842, an interesting example of this. The subject of it, a boy, was born Sept. 4th, 1840, and was plump and firm, but so dark coloured that the nurse supposed that he must have been half strangled by the cord which was twice coiled round his neck. This blueness did not disappear, but the child throve well and was good tempered, but never gleesome. His pulse and respiration were variable. In July he had a convulsive fit and subsequently several others, in one of which, when fifteen months old, he expired.

On post-mortem examination, the aorta was found to arise from the middle of the heart, “and more prominent than usual, not being overlapped by the pulmonary artery, which was less in size than a writing quill.” The heart was gorged with blood; the foramen ovale was open, and about three-eighths of an inch in diameter; the aorta was about a third larger than usual in a child of his size, and took its origin equally from both ventricles; it had the usual three valves at its commencement. The ductus arteriosus was open, scarcely larger than a crow-quill. From where it joined the pulmonary artery, the latter divided into its right and left branches; but its trunk was little larger than a crow-quill, back to near the right ventricle, where it was quite impervious.

The apex of the heart was next cut off, when the two ventricles were seen to be of equal thickness. The handle of the scalpel passed from each of them into the aorta. The septum was deficient, just at the root of the aorta, presenting a smooth concave border, leaving an opening through which the forefinger could be passed. The mitral and tricuspid valves were normal. The upper angle of the right ventricle was directed as usual to the pulmonary artery; but there was no opening, nor were there any traces of valves. The other viscera appeared natural.

The course of the circulation must here have been very uncommon, inasmuch as the blood must have passed in a retrograde direction through the ductus arteriosus, that being the only way in which any *could* get to the lungs, as the root of the pulmonary artery was closed. The blood from the system, poured from the venæ cavæ into the right auricle, and that from the lungs into the left, from the pulmonary veins, must have mingled freely in their passage simultaneously into the aorta: besides that, a portion of the contents of the right auricle must have passed directly into the left, to help to fill it, the quantity which had come through the lungs having been very small indeed. It was no wonder that the poor little fellow should have been blue, as a mixture of three-fourths or four-fifths of venous blood, with but one-fourth or fifth of arterial, was the fluid supplied for his general circulation.

24. *Chorea resulting from Pericarditis.*—Dr. FAVELL in an interesting paper read before the Sheffield Medical Society, Dec. 1, 1842, "On certain Morbid Phenomena, illustrative of the reflex function of nerves," maintained that chorea is occasionally the consequence of pericarditis, and that it sometimes entirely masks the original inflammatory disease. He agreed that there is nothing more extraordinary in this catenation than in the occurrence of chorea from worms or any other source of irritation in the intestinal canal; and that the fact of that irritation being reflected from the seat of lesion is sufficient to account for the usual symptoms of pericarditis being greatly masked and sometimes entirely overlooked. The author afterwards proceeded to enumerate several examples in proof of the position he had laid down. He quoted a remarkable case recorded by Dr. Bright in the *Medico-Chirurgical Transactions*, and one by Dr. Yonge, of Plymouth, in *Guy's Hospital Reports*, and gave the particulars of two cases which had occurred to himself. In March, 1841, a young woman, aged twenty-one, married, was brought into the Sheffield Infirmary, on account of severe chorea, which was of so aggravated a nature that she could neither sit, stand, nor lie. The convulsive motions were so excessive that it required two persons to hold her in bed. She had been suffering for a considerable time (before admission) from rheumatic fever, towards the conclusion of which she experienced a good deal of palpitation of the heart, which was soon followed by chorea. At the time of her admission the intelligence was unimpaired, the respiration natural, and the only complaint she made was of severe pain in the head and palpitation of the heart. The bowels were confined; appetite bad; tongue furred; pulse 96, regular, and of tolerable strength. The spinal column was very carefully examined, but not the slightest degree of tenderness could be detected in any portion of it. On percussing the præcordial region, there was no increase of dulness, but there was a *distinct friction sound heard with both the first and second sound of the heart*. On the third day the patient died, and eight hours afterwards the body was very carefully examined, but the only abnormal appearances detected were in connection with the heart. The external surface of the pericardium was very vascular, and adhered extensively to the left pleura; the quantity of fluid in the pericardium was not greater than natural; there was a considerable patch of vivid redness on the surface of the membrane covering the heart about the base of the left ventricle, and the pericardium reflected over the great vessels was very much injected. The left ventricle was thicker than natural, and the mitral valve was slightly thickened and indurated.

The second case was that of a boy, aged nine, who had been ill for six weeks previous to his admission into the infirmary. At the period of his admission he

complained of severe cough, dyspnœa, and palpitation of the heart. On percussing the chest, the right side was found to yield a good resonance throughout, but on the left side the dulness was much more extensive than natural; a slight sibilant ronehus was perceived in each lung; no fremissement felt on placing the hand over the region of the heart; impulse increased; a prolonged and loud blowing heard with the first sound of the heart, and synchronous with the impulse, immediately beneath the left mamma; the abnormal sound is also heard, but less distinctly along the sternum, as high as the cartilage of the second rib; the second sound normal. Pulse 120, regular. The boy could give no history of his own case, but the following particulars were obtained from his mother:—"His complaints commenced with muscular twitching on one side of the body; the boy was so violently twitched as almost to prevent him walking; sometimes it was violently drawn to one side. The arm on the same side was also so much affected that he could not raise anything to his mouth in a spoon. After these symptoms had continued for a short time, the inferior extremities began to swell, and the twitchings gradually subsided." His intelligence was never in the slightest degree affected. After death, which occurred about two months after he entered the hospital, there was no morbid appearance detected, except in connection with the heart. The pericardium, externally, was much injected, and adherent to the left pleura; it was also very firmly adherent to the heart from base to apex, so that it was almost impossible to effect a separation. The heart was considerably enlarged, and its substance rather soft. The right auriculo-ventricular opening natural, and the tricuspid valve healthy. On the left side, the auriculo-ventricular opening was normal, but the mitral valve much thickened and indurated. The middle segment of the aortic valve was slightly thicker than natural, but the other portions were healthy.

The author afterwards proceeded to remark, that spasmodic affections of different sets of muscles have frequently been observed in connection with pericarditis, and quoted illustrative examples from Andral, Bouillaud, &c. The practical lesson deduced from the whole was, that *it is important in all cases of severe and sudden spasmodic affection carefully to examine the state of the heart by means of the stethoscope.*—*Prov. Medical Journal*, Dec. 17, 1842.

25. *Disease of the Heart.*—Dr. FAVELL exhibited to the Medical Society of Sheffield, a specimen of diseased heart, taken from a man, aged thirty-one, who had suffered from palpitation, dyspnœa, &c., for several years. About a fortnight ago he was admitted into the infirmary. At that time he laboured under great oppression at the chest; the face was livid; the action of the heart very violent; the pulse extremely small; the extremities exceedingly anasarctous, and the pulsation in the jugulars remarkably distinct. The dulness, on percussing the præcordial region was much more extensive than usual; the ventricular contraction yielded a dull, heavy and prolonged sound, which was accompanied by a rough murmur beneath the left nipple; the abnormal sound was louder in the situation of the ensiform cartilage; about the middle of the sternum there was a distinct souffle with the second sound of the heart. The patient had, many years previously, suffered from rheumatic fever. On a post-mortem examination, the pericardium was found closely adherent to the heart from base to apex; the external surface was also adherent to the left pleura; the heart was much larger than natural, and weighed a pound and a quarter; the right auricle was very much dilated; the right auriculo-ventricular opening much enlarged; the tricuspid valve of normal thickness, but shortened by a considerable ossific deposit near its insertion. This permitted free regurgitation into the right auricle; pulmonary valves healthy; left ventricle greatly thickened; the left auriculo-ventricular opening contracted so as only to admit the little finger; mitral valve thickened and indurated; aortic valves much thickened, and containing ossific deposit.—*Prov. Med. Journ.*, Dec. 31, 1842.

26. *Epidemic Croup which prevailed in 1840, and at the beginning of 1841, in the Hôpital des Enfants, at Paris.* By M. E. BOUDET, formerly interne of the

Hospital. The essay (which has been crowned by the faculty of medicine,) begins with a brief historical sketch of the various epidemics of croup of which authors have made mention. They may for the most part be referred to the class either of simple croup limited to the air-passages,—of croup attended with angina and membranous exudations,—or of croup accompanying exanthematous fevers, while a fourth division may include those epidemics of which the accounts in these respects are defective. It appears that croup, when epidemic, has usually coexisted with angina and membranous exudations; that once it was associated with gangrene of the pharynx; that it has but seldom accompanied the exanthemata; and that in some instances its primary seat has been in the air-passages.

A review of the cases of croup at the children's hospital from 1820 to 1839, follows next. It appears that the cases have been most numerous in the autumn months, least so in the spring, while their frequency has been just the same in summer as in winter. The age from two to five years is the most liable to the disease, and it occurs more frequently in boys than in girls. Nineteen of twenty-two subjects examined after death presented a false membrane in their air-passages, which extended into the bronchi, in seven cases, and to the pharynx only in two.

Such are the chief results afforded by the cases of sporadic croup observed during nineteen years. The number of cases which occurred during 1840 and the early part of 1841 was thirty-six, and the description of this epidemic forms the especial object of the paper.

The unusual prevalence of croup in 1840 was not confined to the *Hôpital des Enfants Malades*, but was likewise observed in the *Hospice des Enfants Trouvés*, as well as in private houses in Paris and at Montmartre. The first case of croup in the hospital in 1840, appeared in the month of March, the weather being cold, and the wind northerly. In the following three months four cases of croup occurred; four likewise in the succeeding three months; but in the last quarter of 1840, sixteen cases were admitted. The epidemic did not altogether cease at the close of 1840, but cases continued to occur during the following year. It was remarkable, however, that in no instance did the disease appear in an uncomplicated form, as it had done in the previous year, but always either accompanied or followed diphtheritis. Angina, with formation of false membranes, increased in frequency as the spring advanced, and became associated, in May, with a tendency to gangrene not only of the tonsils, but also of any part from which the skin had been removed by a blister, or sinapism. Croup now became more seldom, but again reappeared in June and July, and did not cease finally until towards the end of 1841.

The instances in which croup appeared wholly devoid of all complication were only four in number; usually it came on in the course of an exanthematous fever, or followed soon afterwards, or it succeeded to a pseudo-membranous angina, or was complicated with gangrene of the skin or the pharynx. The symptoms did not present any important variation from those usually observed, but the post-mortem appearances are described with a minuteness which renders the details very valuable. False membranes existed in some part of the air-passages, in twenty out of twenty-three fatal cases. They were found in the trachea quite as often as in the larynx, but were always thicker and more developed in the latter. In rather less than half of the cases they extended into the bronchi, and in one instance they occupied the bronchi alone, and did not exist in the larynx or trachea. The subjacent mucous membrane usually presented a bright red colour, but without any considerable softening or thickening. In two instances the mucous membrane in contact with the false membrane was ulcerated, and in one of these cases there existed likewise several small collections of pus in the submucous cellular tissue. Whenever croup had not proved very speedily fatal, emphysema, both vesicular and interlobular, was found after death, and usually in a degree exactly proportioned to the mechanical obstacles to respiration. Both lungs were almost always found to be inflamed, but the pneumonia was not usually extensive, seldom occupying more than the base and posterior half of one lobe. In no instance did M. Bonnet find the lung in a state

of purulent infiltration, and in many cases the pneumonia had not passed beyond the first stage.

The mortality of croup is very variously estimated by different writers, and the discrepancies between their statements are so great that one can hardly avoid the supposition that some essential difference must have existed between the diseases they observed. The late epidemic at Paris has been peculiarly fatal. Of twenty-five children received into the children's hospital labouring under croup, in the year 1840, twenty-three died, and of twelve received during the first six months of 1841 all died, or, in other words, the proportion of deaths has been about three times as great in 1840 and 1841, as in former years. In the city of Paris too there was a striking increase in the number of deaths from croup. The number who died from croup in 1838 was 187,

1839 286,

1840 326.

The epidemic croup of 1840 coincided with an unusual prevalence of exanthematous fevers, raging as they became more frequent and subsiding with their decline; till, on the supervention of a pseudo-membranous angina in Jan. 1841, croup was again re-excited. It did not appear as it is usually stated to do at a time when bronchitis, pneumonia, and catarrhal affections, are particularly prevalent, but the very opposite of this occurred. From an examination of all the causes of the epidemic, M. Boudet assigns the first place to the exanthematous fevers, while the unfavourable hygienic conditions of children in the hospital probably increased their liability to the disease. The influence of atmospheric changes he regards as very doubtful, and the influence of contagion as still more problematical, except in 1841, when angina became very frequent, and was readily communicated from one patient to another.

In ten cases tracheotomy was performed, but life was not preserved in a single instance. The conclusions to which M. Boudet has arrived with reference to the operation will be best given in his own words.

"In conclusion," says he, "seeing that no advantage resulted from tracheotomy when false membranes existed in the bronchi, and that it appears to have given rise to ulcerations in one case, and to chronic inflammation of the trachea in another; seeing too that in every instance without exception in which it was performed, double pneumonia was found on examining the body after death, while in some cases of very severe croup in which the patients died after the disease had existed for some time, but in which tracheotomy was not performed, no inflammation of the lungs was discovered on a post-mortem examination, while on the other hand, in some instances where the disease was neither very severe nor very far advanced, life seems to have been prolonged, it may be fairly concluded that the advantages of tracheotomy were very small; that it apparently contributed to the production of pneumonia, and of ulceration or thickening of the trachea, and that when the bronchi contained false membranes, it was of no use whatever.—*Brit. and For. Med. Rev.*, Jan. 1843, from *Archives Générales*, Feb. April, 1842.

27. *Irritability of the stomach produced by eating wheaten flour.*—An example of this curious idiosyncrasy, is related in the *Gaz. Méd. de Paris* of 30th July, 1842, by M. DAVID. It occurred in a soldier, twenty-one years of age, who was seized with vomiting whenever he ate bread or pastry, and was only relieved after evacuating the contents of his stomach. When he abstained from all articles of food containing wheat, he was perfectly well. A careful examination was made to ascertain whether he was feigning, but it was found that if he took soup or any article of food to which wheat flour was surreptitiously added, vomiting was produced. When living with his parents the patient stated that his diet had consisted of potatoes and milk, and that he was in the habit of running away when they wished to make him eat bread.

28. *Nervous Asthma.*—A memoir by M. DUCROS, of Marseilles, was read to the French Academy of Sciences on the 19th of September last, in which the

author states, experience has shown that the application of ammonia at 25° over that part of the cervical vertebræ which corresponds to the pharyngeal plexus, has the power of almost instantly arresting most attacks of nervous asthma. Nine cases are brought forward by M. D. in proof of the efficacy of this treatment.—*Gaz. Méd. de Paris*, Sept. 24, 1842.

29. *Spontaneous perforation of the Stomach*.—In an able article on perforation of the stomach, with numerous cases, M. LEFÈVRE states that the solution of continuity most commonly takes place after the stomach has been filled to repletion; that it generally occurs in those who have laboured under stomach affections, though slight, such as indigestion, acidity of the stomach, cardialgia, &c.; that in them, after repletion, or while the stomach is distended with gaseous matters, often the slightest exertion will produce the rupture of the organ. That the disease is most common in women; a circumstance which he finds it difficult to account for, unless it be attributed, as Sæmmering supposed, to the alteration in the form of the stomach produced by tight lacing and the wearing of stays.—*Edinburgh Med. and Surg. Journal*, January 1843, from *Archives Generales*, Aug. and Sept. 1842.

30. *Conversion of Nerves into fat*.—The body of a male subject, aged 30, was brought for dissection into the anatomical school at Marburg. The whole body was dropsical, and the left leg, from the foot to above the knee-joint, firmly swollen. On the dorsum of the foot were ulcers, from which sinuses could be traced into the tarsal joint. Dissection showed the cellular tissue of the limb infiltrated with plastic lymph, which in the neighbourhood of the ankle had a fatty, and higher up in the limb a fibrous appearance. On account of the carious condition of the joint, as well as the firm nature of this deposit, which was situated between the skin and fascia, and also, beneath the latter, between the muscles, the movements of the lower part of the limb had evidently been suspended for a considerable time. The muscles were pale and flabby, but in other respects not altered in structure. The larger trunks of the nerves in the upper part of the limb were quite normal, but as they approached the affected part they became thickened, and appeared as if composed of mere fat. Portions of the saphenus, and other large branches of the ischiatic, so far as they could be separated from the degenerated mass, with which their sheaths became more and more amalgamated the lower they were traced, were dissected and examined under the microscope; when it was found that an extraordinary quantity of fat had been deposited within the sheath and between the fibres of the nerve, which increased in irregular gradations as it was traced downwards, till it constituted the whole structure of the nerve. The fat globules appeared to be arranged concentrically on the inner surface of the sheath, and by a stronger magnifying power the primitive fibres could, at the upper part, be distinctly seen running in the centre of the fatty deposit. They gradually disappeared lower down, till at length no trace of them could be found, the fat globules having entirely taken the place of the primitive nervous fibres.—*London Med. Gaz.*, Aug. 26, 1842, from *Müller's Archives*.

31. *Diabetes Mellitus cured by Hydrochloric Acid*.—Dr. GENNARO FESTEGGIANO relates in *Il Observatore Medico*, Feb. 1842, a case of diabetes mellitus which he had treated successfully by a drink acidulated with hydrochloric acid, and containing a small quantity of ipecacuanha. The symptoms were abated in eight days, and the patient was cured in a month.

32. *Pulmonary Consumption in Man and Animals*.—M. RAYER read a long memoir on this subject to the French Academy of Sciences, on the 25th July last. The following are his conclusions:—

1st. Of all chronic diseases, pulmonary consumption is the most common in man and animals.

2d. In man and other mammalia, the tuberculous matter can always be easily

distinguished from recent pus, which is loaded with seed globules. In birds, the characters of tuberculous matter are less marked; foreign bodies introduced into the lungs and flesh, do not produce an opaque white humour, full of seed globules, but a dry yellowish matter, without globules, whose physical characters approach those of tubercles in the mammalia. In reptiles, fishes, and insects, the character of tubercle are still less distinct.

3d. Pus, in the mammalia, and chiefly in the horse, if it remains long in any organ, undergoes successive transformations, so that at last it resembles tuberculous matter.

4th. Pulmonary tubercles in man and in the quadrumana have generally a gray colour; in the *pommelière* of the cow the tuberculous matter is yellowish.

5th. In man and animals the softening of the tuberculous matter in the centre cannot be attributed to inflammation, as no pus globules are ever seen; the softening, however, on the circumference is much assisted by the inflammation of the contiguous tissues, and it is almost always mixed with pus globules.

6th. The yellow matter which is found in the cysts of hydatids in the ruminantia after the destruction or spontaneous rupture of the cysts, has some analogy with tubercular matter, (*pommelière*;) but the cysts of this yellow matter almost always contain the debris of the hydatid pouch, and sometimes a certain quantity of pus.

7th. The earthy or calcareous concretions (principally composed of carbonate and phosphate of lime) which are met with in the lungs of man, and other animals, ought not to be considered, as they are even to this day, as being almost always a modification of tubercle. They are frequently in man, and very often in the horse, the residue of a small depot of pus.

8th. Granulations depending on worms and on glanders form in the lungs of several animals, which ought to be distinguished from tuberculous granulations.

9th. Among the quadrumania, and some birds brought from warm climates, consumption shows itself in its greatest degree, and almost to the exclusion of other chronic diseases. It is equally often produced in other animals coming from the north, as the rein-deer, by a change of climate and food.

10th. Consumption, which is rare among the domestic herbivorous (*solipedes*) animals, is still rarer among the carnivorous. However, notwithstanding the preservative influence of a strong constitution, and an animal diet, several of the carnivora, as the domestic cat, and especially the lion, tiger, and jaguar brought to our country, have been seized with phthisis. This rarity of consumption is also seen in birds which are rapacious.

11th. By a kind of contradiction, the domestic dog among the carnivora, and the hare among the herbivora, are less subject to tubercles than to cancer, a disease which Camper thought never attacked the lower animals.

12th. Among the ruminantia, and especially in the class boves, consumption is often associated with vesicular worms, and particularly with the *echinococcus*; but, contrary to the opinion several times given, there is no transformation or succession between these hydatids and tubercles.

13th. Fatty liver is the common accompaniment of consumption in man, and general obesity in birds.

14th. The alterations of bone which are observed in simiæ affected with this disease, and more particularly in those from New Holland, appear analogous to the deformities, swelling, and spongy softening of the bones seen in phthisical and scrofulous children. Similar alterations of bone take place among the carnivora brought to this country from a warmer climate.

15th. If the frequency of pneumonia, and the rarity of consumption in the domestic dog, would appear to do away with any connection between these diseases, the same thing cannot be said to occur in the calf, cow, or female ass, as in these the deposit of tuberculous matter almost always coincides with a chronic and increasing pneumonia.

16th. Consumption is hereditary, but it is almost never congenital, even in the rudimentary state.

17th. Among people affected with phthisis, the semen contained in the seminal vesicles contains few or no spermatic animalcules.

18th. Ulcers in the larynx, trachea, and bronchi, do not indicate the same thing in man and animals. In the former, they are almost always owing to consumption, and sometimes to syphilis; among the quadrumana to general tubercular diathesis, and among quadrupeds almost always to glanders.

19th. In pneumo-thorax, mouldy vegetations may form on the altered pleura of a phthisical patient, as sometimes takes place in the air-sacs of birds affected with consumption, or other diseases of the respiratory organs. In this case, as in all those which have been observed among the vertebrata, the development of these parasites is a secondary phenomenon.

M. Rayer classes the causes of consumption under four heads: A domestic state and captivity for the inferior animals, and misery and fatigue for man; and he concludes that science, which is altogether powerless in curing the disease, ought not to be so in preventing it.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Dec. 1842.

In opposition to the seventh conclusion of M. R., M. Prus asserts that for ten years he had been endeavouring to ascertain, at the Bicêtre and the Salpêtrière, the curability of tubercles, that he has been led more and more to believe that the earthy concretions, which are almost always at the summit of the lung, are only modified tubercles; that they are generally accompanied by traces of cicatrization; that sometimes old cavities, lined with a new mucous membrane, co-exist along with them; and, lastly, that it is easy to find, even in the same lung, tubercles in different degrees of progress, which present all the phases of this secretion, from its origin to its earthy state, and frequently the same cyst contains both tubercle and earthy matter. Such are the reasons which make him dissent from M. Rayer's theory, that the earthy concretions are the result of a dépôt of purulent matter in the substance of the lung, and not a modification of tubercle.—*Ibid*, Feb. 1843.

33. *On Primary Syphilitic Bubo.* By M. DE CASTLENAU.—May a bubo of a truly syphilitic nature arise without antecedent chancre? Many writers on syphilis say *yes*. Many, with one of the latest and ablest, M. Ricord, say *no*. M. de Castlenau has given the details of three cases, in which there seems to be no reason to doubt of the origin of the buboes, independently of antecedent external chancre. In one of these cases there was the very decisive evidence of the specific nature of the sore which followed the opening of the bubo, in the accidental inoculation of the surface in its neighbourhood.

Pell (Marg.), aged 20, a week after connection, was seized with the ordinary symptoms of gonorrhœa, and by and by perceived a swelling in her right groin. The parts were examined with great care; no excoriation or ulceration was discovered either externally or internally; neither were there now any symptoms of gonorrhœa present. In the right groin there was a bubo, superficial, and on the point of giving way; in fact it did give way immediately after the visit. Next day another examination was made, but no chancre was discovered. The open bubo exhibited hard, inflamed, and sharply defined edges; the surface was gray and chancre-like, and suppurating copiously. Above the open sore a small pustule was observed, apparently the consequence of the natural inoculation of the pus poured out by the bubo. The wound was cauterized with nitrate of silver in substance. Two days later the sore had still the same chanceroous character. The pustule was now a regularly rounded sore, with raised edges, sharply cut, and rather hard and red; its bottom was gray. A second pustule, like the first, was perceived on the skin to the inside of the principal sore. Three days afterwards this second pustule had become a chanceroous sore, with the same characters as the other two. The patient, under appropriate treatment, recovered.—*Lond. and Edin. Med. Journ. Med. Sci.*, Feb. 1843, from *Archiv. Gen. de Méd.*, Dec. 1842.

34. *Tubercular Deposits in the Bronchial Glands.*—DRS. RILLIET and BARTHEZ, from their extensive researches into this interesting subject, find, that, by compressing the vena cava superior, tubercular enlargement of the bronchial glands may be followed by—1. Œdema of the face; 2. Dilatation of the veins of the neck; 3. Livor, in a greater or less degree, of the countenance; 4. Hemorrhage into the arachnoid cavity.

By compressing the pulmonary vessels they occasion—1. Hæmoptysis; 2. Œdema of the lungs.

When they press upon the pneumogastric nerves, they cause—1. Alterations in the pitch and quality of the voice, and cough; 2. Violent fits of coughing, resembling those of whooping-cough; 3. Asthmatical attacks.

The action of enlarged and tubercular bronchial glands on the lungs and bronchi is very remarkable. By compressing the air-passages, they produce—1. Sonorous *râles* of great intensity, very persistent, and of which the quality is sometimes very peculiar; 2. They impede the access of the air, whence follow obscurity in the respiratory murmur, though this sometimes depends on the œdema of the lung, which is consequent on the pressure upon its returning blood-vessels. Sometimes they serve as conductors of sonorous vibrations, from which the following effects ensue:—1. Alterations in the character of the respiratory murmur, the lungs themselves being perfectly healthy, such as prolonged expiration, bronchial respiration, and all the sounds which, in the normal state, must take place in the bronchi, but which do not reach the ear; 2. Great extension of the stethoscopic indications of any particular lesion, as from the one side of the chest to the other.

The observations, of which the above summary is given, were made upon children. *Ibid.*

35. *Tic Douloureux cured by repeated blistering.* By M. D. VALLEIX.—The patient was a woman, forty-two years of age, much exposed to the weather, and labouring under a fourth attack of neuralgia facialis. The pain began from the right suborbitary hole, and then radiated towards the temple and side of the head. Any motion of the face, such as chewing or laughing, brought on the attack with dreadful severity. The right side of the face was held so motionless that the patient looked, at first sight, as if affected with paralysis there. The appetite was good; all the functions were regularly performed. Infusion of lime-tree flowers; two flying blisters, one to the lip, another to the forehead. Next day another blister to the right cheek. The patient suffered greatly, immediately after the blisters; but by and by she complained less; and from the 11th to the 19th August improved much. On the 16th, 19th, 22d, 24th, and 30th, blisters were applied again, and the patient made progress. On the 1st September, M. Louis having taken his turn of hospital duty, opiates were presented freely to the 7th; but the patient gradually got worse and worse. On the 7th the blisters were again had recourse to, and on this occasion with such effect that the patient made no farther complaint, but recovered completely, and soon left the Hôpital Beaujon quite well.—*Ibid.*

36. *Diagnosis of granular degeneration of the Kidney*, by Dr. C. HALLER, of Vienna.—This paper consists in the main of two cases, in one of which all the symptoms of granular degeneration were present, without more than a hyperæmic state of the kidneys having been discovered after death; whilst in the other case, not one of the symptoms generally held indicative of the granular degeneration, were observed, although the *post-mortem* dissection showed the kidneys in the third stage of this disease.

A man, 58 years of age, had long suffered from shortness of breath, palpitation, and dyspepsia. The patient generally passed the night in the sitting posture, and in great distress. Percussion indicated enlargement of the heart, and auscultation proclaimed insufficiency of the mitral valve, and roughening of the aorta. The eyelids were puffed, and the ankles swelled, in the evening especially. The urine was in ordinary quantity, of a pale yellow colour, and

without a trace of albumen. The patient, for some days after his reception at the hospital, complained of precordial pains, and had repeated attacks of epistaxis; ten days after his reception he had a severe asthmatic attack, difficulty of breathing, palpitation, intermitting pulse, cold skin, great feeling of distress, &c. The lungs, on auscultation, were found healthy; the impulse of the heart, heard widely, was but weak; at the root of the heart and along the aorta, at the moment of the systole, there was a murmur, masking the second sound. Eighteen days after his entrance, the patient had another severe attack, and the infiltration increased greatly; the urine was abundant but turbid, the respiration free. Three days after this he had a third attack, the urine scantier and darker; by and by the patient complained of lancinating pains in the region of the kidneys; the urine was passed with difficulty, and always in smaller and smaller quantity; it was of a dark red colour, frothy, and, when treated with nitric acid and boiled, was found to contain a large proportion of albumen. Next day the patient was taken with sickness and vomiting, and then he became comatose; no urine was secreted, the bladder was empty. Next day a little urine was passed; it was like beer, and contained albumen. Matters went on from bad to worse, till the patient, (having recovered his consciousness,) died. In the ventricles of the brain, from two to three ounces of serum were found; the arteries of the brain generally contained white bony plates in their coats. The heart was about twice its normal size; the walls of the left ventricle were one inch in thickness; in the mitral valve, were many bony plates; the other valves were natural; in the ascending aorta numerous and large bony plates existed, the internal surface, was rough, uneven, and sinuous. The liver was large and congested, as was the spleen; the kidneys were firm and congested; there was no trace of granulations in their cortical substance; the infundibula were collapsed, the ureters and bladder empty.

CASE II.—A man, aged 28, who had not previously been ill, complained of sleeplessness, dyspnœa, cough and diminished secretion of urine. His face and whole body were leuco-phlegmatic and infiltrated; the skin was dry; the respiration difficult; cough with mucous expectoration; the urine scanty, of a deep red; bowels relaxed; pulse slow and full. Percussion and auscultation,—posteriorly, the respiratory murmur was diminished; superiorly and anteriorly, there was moist crepitation; inferiorly, and posteriorly, the murmur was absent. Impulse of the heart, by reason of the œdema, was diminished. The urine, treated with nitric acid, effervesced, but neither with this acid, nor after boiling, did it let fall any albuminous precipitate. In the next following days, the anasarca went on increasing; the urine, secreted in very small quantity, was nearly black; the diarrhœa continued. By and by, auscultation proclaimed œdema of the lungs to have taken place; the patient was brought to extremities by dyspnœa; an attempt to evacuate the water from the abdomen failed, and under continuing diarrhœa, stupor, delirium, and repeated attacks of syncope, he sank asphyxiated. The treatment consisted in the exhibition of infusion of fennel with acetate of potash and oxymel of squills, digitalis, calomel, juniper, &c.

Dissection.—The body was highly anasarcaous. The brain was firm; there were a few drachms of serum under the arachnoid at the base. The pleuræ contained two or three ounces of serum. The lungs were œdematous superiorly, and infiltrated inferiorly. The left ventricle of the heart was somewhat hypertrophied, its cavity diminished; the valvular apparatus was everywhere perfect. In the abdomen, were six quarts of serum. The liver was large, finely granular with predominating yellow substance, not fatty. Both kidneys were remarkably enlarged, and altered in a very high degree in the manner indicated by Bright; they presented the degeneration in the third form as described by Rokitsansky; the calices and ureters collapsed and empty; the bladder was small and empty.—*Ibid.*

37. *Bright's kidneys without albuminous Urine; albuminous Urine without Bright's kidneys.*—A man named Connell, aged 50, was admitted in the month of June, 1841, into the Meath Hospital, labouring under morbus cordis and

phthisis, accompanied with ascites and anasarca of the legs. In this case the urine was examined at six different times between the period of his admission and that of his death, which occurred about a month after; and on no occasion was the slightest trace of albumen detected, yet at the *post-mortem* examination we found the kidneys in the following condition: "the right kidney was of its natural size; it was pale, and its component parts seemed mingled into one structure, of a pale granular appearance; the left kidney was exceedingly small, and was contracted into an hour-glass shape in the middle. It was hard, and its proper capsule came off with the greatest ease, exhibiting a rough, irregular, and nodulated surface, a section of which displayed an excellent example of what is termed Bright's kidney in the last stage." The above description is taken from the Case Book of my clinical clerk. At the first meeting of the Pathological Society for this session, I exhibited those kidneys; and at the same meeting my friend, Dr. Cathcart Lees, showed the kidneys of a child of a scrofulous habit, whose urine had been highly albuminous. The kidneys were in every respect healthy.

While one of the preceding cases proves that we may have Bright's kidneys without albuminous urine, the other shows that we may have albuminous urine without Bright's kidney, facts, which, coupled together, militate strongly against the hypothesis, that the change in the structure of the kidney is connected with the appearance of albumen in the urine. But the discussion of this subject is important not only in a theoretical, but also in a practical point of view. Dr. Bright, in p. 70, vol. i. of his "Medical Cases," lays down the doctrine, that in cases of dropsy, the presence of albumen in the urine ought to deter us from the use of mercury, an opinion which is opposed to my experience; for I have treated several such cases successfully with mercury, and, amongst others, I may allude to that of Staff-Surgeon Finney, and to the case of Lindsey, a patient lately in the Meath Hospital.—GRAVES'S *Clinical Lectures*, Dublin, 1843.

38. *Proto-ioduret of Iron in Consumption*.—M. GILBERT BOISSIERE has drawn up the following paper, from observations he made on 27 cases under the care of M. Dupasquier, in the Hôtel Dieu of Lyons. This gentleman, in 1835, was the first who employed the proto-ioduret of iron in the treatment of phthisis. Previous to this time, a salt of iodine and iron was known, but it was always prescribed in a solid form, and used only in scrofulous tumours, chlorosis, and amenorrhœa. M. D. was the first who used this preparation in the form of a solution, and the results he obtained from it were very different from those that followed the employment of the proto-ioduret in the solid form. M. Boissière begins his paper by describing the physiological action of the remedy. The first symptoms appreciable after taking it are, headache, increase of pulse, bitter taste in the mouth, anorexia, and thirst. These are succeeded by nausea and vomiting, some irritation of the alimentary canal, general turgescence of the capillary system, cough, sometimes slight hæmoptysis, noise in the ears, and want of sleep. After having described these symptoms in a lengthened manner, he proceeds to speak of its action in consumption, and to detail its effect on each particular symptom of the disease. It is unnecessary for us to mention each of these in succession; suffice it to say, that during the first few days of its administration, the cough becomes more frequent, and the expectoration more abundant and free, but both of these soon diminish to such a degree, that sometimes from the fourth to the fifth day of its administration, a patient, by the end of three weeks or a month, who was never free from the cough for a quarter of an hour, is not troubled with it oftener than four or five times, and occasionally not more than once or twice daily. In cases where all signs of tubercles in a crude state were found, as prolonged expiration, dulness on percussion, &c., these have entirely disappeared, and M. Boissière thinks it right to conclude that the disease was cured. In other patients again, where caverns existed, the symptoms have been much ameliorated, and in two, both the pectoriloquy and *gargouillement*, which were very distinct before the medicine was taken, could no longer be detected, after it had

been persevered in for some time. From all the observations he has made, M. Boissière is of opinion that the physiological and therapeutic properties of protoioduret of iron resolve themselves into a tonic, astringent, and resolutive action. As a tonic, it excites all the functions, particularly that of digestion, hæmatose, and assimilation; as an astringent, it diminishes the increased secretion of the mucous membrane, and the nocturnal sweats; and as a resolutive, it stimulates the absorption of the organic products deposited in the pulmonary tissue; and he might add to these, he says, the power it possesses of favouring and hastening the cicatrization of the cavities, if this latter was not contained in the other three. It would appear, then, that this medicine is not only innocuous, but of great utility in phthisis pulmonalis, and that there is no other remedy which can bear a comparison with it. Owing to the rapid oxidation of the proto-ioduret of iron, it ought only to be prepared when it is required; if, however, it is necessary to keep it ready made, the syrup of gum is the best vehicle in which it can be preserved, as the sugar and the gum have the effect of preventing the oxidation of the iron. It ought to be kept from the air, and at a moderate temperature. After the syrup of gum, the next best mode of administering it is a mixture containing gaseous or distilled water. When decomposition has commenced, it is recognised by the liquid assuming a greenish, and then a reddish-brown colour. When it is kept in the syrup of gum, this salt may remain for a fortnight or even more without decomposition occurring. Every drop of the preparation employed by M. Dupasquier contains one grain of protiodide, and the ordinary dose per day is fifteen drops, increased to 120, beyond which it ought not to be pushed. When given in this quantity, it is either continued for some time, or if any unpleasant symptoms follow, it is suspended for a week, or until they subside, and after their disappearance it is to be again begun in the dose of fifteen or twenty drops. In children or very weak people, the treatment may be commenced with ten or even five drops a day. M. Dupasquier employs at the same time the remedies commonly had recourse to in phthisis, and he recommends his patients to eat as much animal food as possible, and to keep themselves warmly clothed.—*Lond. and Edin. Med. and Surg. Journ.*, Feb. 1843, from *Gaz. Méd. de Paris*, Dec. 24, 1842.

39. *Concrete Naphthaline in Psoriasis*.—Dr. EMERY has employed concrete naphthaline with much advantage in the treatment of psoriasis. He uses it in the form of ointment, composed of two scruples of concrete naphthaline and ten drachms of lard. One case of inveterate psoriasis which had existed for sixteen years, and had resisted arsenic, iodine and mercury, was cured in six weeks by this ointment, of twice the strength just mentioned, spread on lint and applied over the diseased parts night and morning.—*Bulletin Gén. de Thérapeutique*, July 1842.

40. *Causes of Sudden Death*.—At the late scientific meeting at Strassburgh, M. G. TOURDES communicated a statistical notice on the sudden deaths in that town. The causes of death, as ascertained in twenty-six cases, by post-mortem examination, were as follows:—

	No. of Cases.
Apoplexy (cerebral hemorrhage) - - - - -	1
Serous apoplexy - - - - -	1
Cerebral congestion - - - - -	4
Cerebral and pulmonary congestion - - - - -	1
Hæmoptysis - - - - -	1
Foreign bodies in the bronchi - - - - -	2
Pulmonary congestion - - - - -	13
Syncope - - - - -	1
Perforation of the intestines - - - - -	2
	26

1. In more than half the cases, death occurred while digestion was going on, and the stomach contained a considerable quantity of food, recently swallowed.

2. The blood was fluid, or mixed with diffuent clots in two-thirds of the cases; it was always so in the instances of pulmonary congestion, with one exception.

3. In two-thirds of the cases there was organic disease of the heart. It consisted in concentric, or more frequently eccentric hypertrophy, with dilatation of the cavities; there was never any narrowing of the orifices. These alterations favoured the development of the affections of the lungs and brain.

4. Sudden death occurred more frequently among men than women, and among the latter at a more advanced age. Cases were most numerous in summer and winter, particularly the latter.

M. Mayor, of Lausanne, cited three instances of sudden death through syncope from slight or unknown causes. No diseased structure was found on examination.

M. Bertini saw a young man die suddenly from syncope, at the moment the surgeon was introducing a sound into his urethra.—*Lond. Med. Gaz.*, Jan. 1843, from *Gaz. Méd. de Strasbourg*.

41. *On the Causes and Treatment of Goitre*.—A communication was read to the French Academy of Sciences, August 1, from M. PASCAL, on the local influences which assist in the development of goitre, and on the use of ferruginous mineral waters in preventing and curing this affection. From the observations of MM. Bénédicte, Fodéré, and Roulin, it appears, 1st, That the stagnation of humid air, whether cold or warm, eminently predisposes to this disease, and that all the moist gorges of the mountains towards the north are more particularly the localities in which bronchocele exists to the greatest extent. 2d. That the use of impure cold water, as the habitual beverage, is, if we may so say, the exciting cause of the affection in those places already predisposed. The water from wells, cisterns, and pumps, is said to be the most injurious.

M. Pascal then directed attention to the following fact:—At about three leagues from Metz are three villages, named Pierre Villers, Rombas, and Villers les Rombas, all of which are similarly situated as regards hygiene, with the exception that Villers had a chalybeate spring, which was generally used by the inhabitants for cooking and drinking. Now fifty years ago, while goitre attained a large size, and was very common in the two other villages, it was unknown in Villers; and it was observed, that those who came to reside in it from Pierre Villers and Rombas, got cured if they were already affected with the disease, or if they had it not at the commencement of their residence, continued free from it. From this circumstance we cannot but admit that the chalybeate was the cause of the inhabitants of Villers not being affected with bronchocele. Since the above period goitre has almost entirely disappeared from the other two localities, owing to the improvements that have taken place in the condition of the atmosphere, in the houses of the villages, and in the food of the inhabitants.

From these facts we may conclude, 1st, That notwithstanding the humidity and stagnation of the atmosphere, the use of a chalybeate water prevents the development of goitre, and cures it when it is formed; and, 2nd, That even when no ferruginous spring exists, amelioration in hygiene greatly counteracts the predisposition of the inhabitants to be affected with bronchocele.—*London and Edinburgh Monthly Journal of Medical Science*, Dec. 1842.

42. *New Mode of arresting Epistaxis*.—M. NEGRIER communicated to the French Academy of Sciences on the 5th of September last, five cases confirmative of the means which he proposed for arresting epistaxis, (see our last No. p. 203,) namely, by raising and keeping elevated one or both arms. M. N. reasserts that as soon as one or both arms were raised in these cases the blood ceased to flow. The effect of this method was *immediate*, and in the five cases reported the hemorrhage was permanently arrested.—*Gaz. Méd. de Paris*, Sept. 10, 1842.

[We are informed that this is a *popular* remedy for epistaxis in some parts of our country.]

43. *Geological causes of Hill Fever in India.*—Dr. HEYNE, of Madras, has published an important communication on the hill fevers, the principal cause of which he considers to be the geological composition of the hill where the fever occurs. It exists, he says, constantly and invariably among certain descriptions of hills, when others, of a different composition, are as constantly free from it. The hills where it is found to prevail are the granite rock, but contain in addition, quartz, felspar, and mica, besides a great proportion of ferruginous hornblende, which, by its disintegration or separation from the rock, becomes highly magnetic; to this Dr. Heyne refers the cause of the fever. This granite is remarkable for its disintegration, as it not only separates during the hot season in large masses of many tons, but crumbles as easily into its component particles, and is found as sand in great abundance, not only near every rock, but near every stone, whence it is carried by the torrents, during the rains, to the lower parts of the country, and thus forms the particular mark by which these hills may be distinguished from all others. It is the source whence all the iron in that part of India is obtained. It is generally not attracted by the magnet when united to the mass, even when it occurs, as in hornblende slate or greenstone, in the greatest abundance, but it is after it has been separated, as much as iron filings, owing probably to incipient oxydation or the development of magnetism by the high temperature, which has caused the disintegration of the rock.

The hills, where the fever is unknown, consist of primitive trap—viz., quartz, felspar, and real hornblende, with little or no admixture of iron-stone. In fact, wherever the iron granite or magnetic iron-stone rocks occur, there will be the fever, while the hills, whose strata are free from ferruginous compounds, are equally free from the destructive typhus fever alluded to by Dr. Heyne.

Dr. Heyne says, “A most remarkable instance illustrative of these facts, and of my deductions from them, I found at Tripatoor, which lies in a valley, close to a large table-land, the rock of which is sand-stone. I asked there a respectable native whether any such disorders as fevers were frequent in that country, but received in answer, ‘No, thank God, not within ten miles of this place; at Javadymalle, a hill fort, where no man can live two days without getting it.’ To this place a person was despatched with the simple order to bring two or three stones from the rock of the hill, and some sand from the road. The man returned, and brought pieces of a rock composed of red felspar, quartz, and plenty of ferruginous hornblende; and the sand of the road consisted entirely of magnetic sand and particles of felspar.” In the Pulicat hills, which consist entirely of flinty slate, the hill fever is totally unknown, as are also those of the Cuddapah district, which are composed of the clay-slate formation; some are calcareous. At Kishna, near Chintupilly, a place at all times dreaded for its fevers, the iron granite hills prevail again. Dr. Heyne states it as his belief, that his observation that the hill fever on this coast exists exclusively among the hills of the granite formation, or where iron-stone is found in large quantities, will be confirmed the more it is brought to the test.

Hills of this description are easily recognised at a distance by their very rugged and abruptly pointed appearance and the great steepness at their tops. The ranges of this formation are also very interrupted, and generally consist of rows of single hills, although to the southward they have been found connected also at their bases, and in triple and quadruple ranges.

The cause of the fevers apparently existing in the iron-stone range of hills, is attributed by Dr. Heyne to the magnetic or electric fluid which seems to exist in the greatest abundance in the iron hornblende, and is disengaged in great quantity in the hot season. This, he says, must be, on common physical principles, the case, when the temperature is more than usually increased, as it is known that a high degree of electricity can be raised in certain minerals by merely heating them. The hottest season, therefore, when the rocks exposed to the meridian rays of the sun are raised to the accumulated heat of 220° , is the epoch when the fever rages most, which is supposed to originate from the greater development of magnetism. It stands also to reason that the first rain, which cools the atmosphere down to 74° , must put a stop to the discharge of the mag-

netic or electric principle, and to the further progress of the fever. Epidemic fevers, in Madras, are preceded by electrical phenomena; and Dr. Heyne expresses his opinion that all fevers are in some degree engendered by a superabundance of electricity, either from the local situation, or the habitude of the individual.—*Provincial Medical Journal*, Sept. 3, 1842, from *Madras Medical Journal*.

44. *Report on the Results of Inoculation in Measles.* By Dr. M. VON KATONA, of Borsoder, Hungary.—In a very malignant and wide-spread epidemic of measles in the winter of 1841, the author inoculated 1122 persons with a drop of fluid from a vesicle, or with a drop of the tears of a patient with measles. The operation was performed in the same manner as the inoculation for smallpox. It failed in 7 per cent. of those on whom it was tried, but in all the rest it produced the disease in a very mild form, and not one of them died. At first a red areola formed round the puncture, but this soon disappeared: on the seventh day fever set in, with the usual prodromi of measles; on the ninth or tenth the eruption appeared; on the fourteenth desquamation commenced, with decrease of the fever and of the eruption; and by the seventeenth the patients were almost always perfectly well again.—*Brit. and For. Med. Rev.*, Jan. 1843, from *Oesterreichische Medicinische Wochenschrift*, July 16, 1842.

45. *Hairs growing on the Tongue.* By Dr. BEER, of Brunn.—The patient was a medical student, who after complaining for some time of dyspepsia and a *sticky* sensation in the mouth discovered hairs of considerable length grew from his tongue. They were detached in vomiting, but they grew again, and when the author saw him they were an inch long.—*Ibid.*

46. *The relative frequency of Tubercles in various organs.* By Dr. ENGEL, of Vienna.—The proportional frequency of the occurrence of tubercle in the lungs to that of tubercle in the cerebral membranes, the pleura, liver, and spleen, is as 18 to 1; to that of tubercle in the brain and kidney as 18 to 2; and that of tubercle in the peritoneum and intestines as 18 to 3. This is the more remarkable, when compared with the relative frequency of cancer in the same organs. Cancer of the lungs occurs, in proportion to cancer of the liver, as 18 to 48; to cancer of the stomach as 18 to 42; to cancer of the intestines and kidneys as 18 to 12; and to cancer of the brain, spleen, peritoneum and uterus, as 18 to 18. The frequency of tubercle of the lungs is to that of all other diseases of those organs as 2 to 3.—*Ibid.*, from *Canstatt's Jahresbericht*, 1842.

47. *Epidemic Cerebro-Spinal Meningitis, observed at the Medical Clinique of the University of Strasburg.* By Professor FORGET.—The description given by the Professor of this epidemic is so long, extending through several numbers of the *Gazette Médicale*, (April and May, 1842,) that we cannot afford space for more than the brief abstract of it contained in the *Gazette des Hôpitaux*, June 1842.

The epidemic which began towards the close of 1840, and continued to prevail until May, 1841, was almost exclusively confined to the poorer classes, and no cause could be assigned for its occurrence. Many writers have insisted on the suddenness of the attack, as one of the characteristics of the epidemic: there existed, however, a stage of premonitory symptoms, marked by occasional rigors, slight lassitude, headache, loss of appetite, &c. At the onset of the disease severe pain was felt in the forehead, temples, and occiput. This pain was sometimes constant, at other times it remitted at intervals; it was of a pulsating or lancinating character, or caused a sensation as though the head were bound with cords, or subjected to pressure, or as though it were being bored, or rent asunder. If the disease continued for any time the headache was succeeded by delirium or coma. It was accompanied by vertigo, confusion of the ideas, and hallucinations of the senses of sight or hearing. Pain in the back was a pathognomonic character of the epidemic. It was more frequently referred to the back of the neck than the loins, and occasionally it was so severe that patients lay mo-

tionless on their back, not daring to move, for fear of exciting it afresh. Opisthotonos was often associated with the pain in the back, as was trisismus, in some instances. The brows were knit, the eyes fixed, and risus sardonius was often observed. There was generally considerable weakness and pain in the limbs; sometimes there was a condition of general or partial agitation, and subsultus tendinum was frequent in the advanced stages of the disease. In one instance there was a general trembling of the limbs, as in delirium tremens. In some cases there were clonic convulsions, and an epileptic seizure occurred in one instance. Delirium sometimes existed from the beginning, and coma without stupor accompanied or followed the delirium in some instances. Paralysis was rare. The eyes were affected in various ways: the conjunctiva was seldom injected, strabismus was rare, the pupil was sometimes dilated, sometimes contracted, occasionally natural. Optical illusions occurred sometimes, the sight was often obscured, but complete blindness was never noticed. Tinnitus aurium, deafness, and occasionally, deafness and loss of speech occurred in the same person. The face was occasionally turgid, but paleness of the face and integuments were more frequent, and burning heat of the skin was seldom noticed except of the forehead. As death approached the extremities became cold. An extensive eruption of *herpes labialis* was frequent, but did not appear to possess anything of a critical character. The tongue was usually moist and white at the beginning, and afterwards became dry, red, or brownish. As soon as the cerebral symptoms began to abate, the patients felt a desire for food. Thirst was usually not urgent. Vomiting at the commencement of the disease was of constant occurrence, and very severe. The bowels were generally constipated at first, afterwards purged. There was abdominal tenderness, either of the epigastrium, or of one side, usually the right, and as the disease advanced, the belly sometimes became distended and tympanitic. In many cases there was slowness of the pulse, which contrasted with the acute character of the other symptoms, and its beats were irregular. In some instances the bladder was paralysed.

Course of the disease, its terminations, its forms. In those who did not sink under the onset of the disease, the headache gave place to delirium, which was soon followed by coma. The vomiting ceased, but the pain and stiffness of the spine continued. Sometimes the disease remained stationary at this point so as to give rise to hopes of the patient's recovery. Gradual exhaustion, however, delirium at night, diarrhoea and obstinate vomiting came on, and ushered in the fatal termination.

Post-mortem appearances. The sinuses of the brain were gorged with blood. Sero-albuminous deposits on the parietal layer of the arachnoid, whenever fluid was contained in its cavity. A considerable quantity of sero-purulent fluid was found almost always in the lower part of the spinal canal. The pia mater was always injected, and this injection extended to the spinal marrow through a greater or less extent. On a level with the calamus scriptorius the arachnoid was frequently raised by a turbid serum effused beneath it. In the sub-arachnoid tissue were various deposits, sometimes resembling gelatin, at other times, like concrete albumen, or like true yellow pus, abounding especially about the optic nerves and around the origin of the spinal cord. Pus-globules were detected in this matter by the microscope. No important appearances were found in other organs, and in an anatomical point of view this epidemic presented nothing distinct from what is observed in sporadic meningitis, any more than it did in its symptoms.

Treatment. This consisted in free general depletion, repeated two, three, or four times in the course of two or three days, if the disease seemed to require it. Local depletion, either by leeches or cupping, produces, however, more marked relief than the general abstraction of blood. It appears, too, from the statistics furnished by M. Forget, that the patients who recovered lost more blood than those who died. The employment of calomel led to no good results whatever, but often produced obstinate diarrhoeas, or affected the mouth severely. Tartar emetic, employed as a revulsive, did no good. M. Forget at length contented himself with mild laxatives to counteract the constipation. Blisters were frequently employed after or conjointly with depletion.

Febrifuge tonics, as quinine, antispasmodics, and excitants were tried and found to be injurious; but after the disease had been broken by antiphlogistic measures, many of the nervous symptoms which remained were greatly relieved by the administration of opium.—*Ibid.*

48. *Warty excrescence of the Larynx*.—Dr. FLETCHER exhibited to the Birmingham Pathological Society, (Aug. 6th. 1842,) a larynx on which warty excrescences were attached to the whole length of the inferior cordæ vocales, so as almost entirely to block up the air passage. The trachea and thymus gland, which was enlarged, were attached to the specimen. It was taken from the body of a fine child, aged two years, Richard Wells, of Nechell's Green, who was brought to Dr. Fletcher as a patient April 18, 1842. He suffered from great difficulty of breathing, which was of a rough and croupy character in its inspiration, especially after any exertion or crying. His mother stated that it was first perceived when the child was about three months old, and had come on gradually; he had never spoken, and appeared to have no voice; he had been quite healthy with that exception; he had never had croup or any inflammation of the chest or windpipe.

On examination of the chest, there was found dulness on percussion over the upper half of the sternum, and the respiration was blowing in the same situation, so that an opinion was formed that the thymus gland was enlarged. All other contents of the chest appeared healthy on examination.

There appeared to be great obstruction in the trachea. The parents of the child are perfectly healthy, and it cannot be ascertained that they have either had any syphilitic affection. The treatment consisted in blisters to the upper part of the chest, small doses of iodide of potassium, and attending to the bowels.

The state of the child continued about the same, with little amelioration up to the 6th of June, when the respiration appeared somewhat better than usual. On the 8th he was taken with epileptic fits, when Mr. Cross was called in; he died on the 9th, and on the 10th Mr. Cross requested Dr. Fletcher to be present at the post-mortem examination, which was made at six o'clock, P. M., thirty hours after death.

The head was not permitted to be examined.

The lungs were congested, and the heart loaded with blood; the thymus gland was enlarged, being about a third more than its usual size at this age; the trachea was healthy and the bronchi also. In the larynx, from the inferior cordæ vocales, a fringe of warty excrescences grew out, which, as nearly as possible, shut up the air passage in this situation.

The viscera of the abdomen were healthy.

The patient appeared to have died from asphyxia.

Dr. Fletcher said that he thought this might be an interesting case to the society; there were not many on record. Mr. Ryland, in his treatise on the Diseases of the Larynx, had mentioned all that Dr. F. had been able to find; and this differed from all of them, inasmuch as the growth here was confined to the line of the inferior vocal cords; but it was also interesting when considered in relation to the operation of tracheotomy.—*Prov. Med. Journ.*, Sept. 3, 1842.

49. *Hemiplegia from tying the Common Carotid Artery*.—M. SEDILLOT applied a ligature to the common carotid to arrest hemorrhage, in a man who was wounded behind the right branch of the lower jaw. Complete hemiplegia of the left side of the body, and of the right side of the face followed, and the patient lost his intelligence so far that he could scarcely comprehend questions put to him. He died nine days after the application of the ligature, and the post-mortem examination showed that the hemiplegic symptoms had resulted from the right side of the brain having been deprived of its due proportion of arterial blood.—*Gazette Med. de Paris*, 3 Sept. 1842.

50. *Ossification of the Diaphragm and Partial Aphonia*. By JAMES PAGAN, Esq. The most remarkable feature in this case was, that the patient's voice was quite

weak, and he could only speak in a gentle whisper, even when he endeavoured to speak as loud as possible. He stated that he had lost his voice two years ago; he did not know from what cause, and complained only of debility. Six weeks before death a slight cough came on, which soon became troublesome, and was accompanied by acute pain in the lower right thorax, where the sound was so dull on percussion; on the application of the stethoscope the respiratory murmur could not be heard. The pulse was quite natural to the last. He was treated by repeated applications of leeches and blisters to the pained part, the usual inward remedies were also administered, but debility increased daily, and some anasarca came on before death.

On opening the chest after death, there was observed on the right side close to the sternum, a perfect cavity formed by a strong false membrane, which contained some four or six ounces of serum; the inner coat of this bag was soft and like jelly, but the outer was strong and thick. On attempting to remove the right lung the adhesions of the pleura costalis and pulmonalis were so strong that they could not be separated, and the lung was brought out piecemeal; to a considerable extent it was found in a hepatised state and sank in water.

The portion of the diaphragm situated between the liver and right lung was found ossified to a considerable extent, so much so that it was a difficult thing to remove or cut it with a knife.

No disease could be detected in the throat.—*India Journ. of Med. and Phys. Sci.*, Nov. 1841.

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51. *Observations on Tubercle of the Brain in Children*, with a Tabular View of Thirty Cases of the Affection. By P. HENNIS GREEN, M.B.

Dr. Green observes, with justice, that the subject of tubercle of the brain in children has not attracted sufficient attention. He observes, too, that it would be a desirable thing if all cases of cerebral disease were carefully noted, and the appearances after death accurately ascertained. He has known many instances of "anomalous disease" of the brain, explained by lesions of the medulla oblongata which had escaped notice. He recommends that the spinal marrow should, in all cases of fatal cerebral disease, be carefully examined—a recommendation not likely, we fear, to be acted on.

He presents us with a table, which contains the name, age, sex, symptoms, and lesions, of 30 children who died from or with tubercles of the brain.

"The ages varied between nineteen months and twelve years; 13 cases occurred at the period comprised between the ages of two and four years, inclusive; a greater number than occurred during any other three consecutive years.

"With respect to sex, 14 were boys, 16 girls.

"In 4 cases no symptom whatever of cerebral disease existed during life; in 2, the chronic symptoms were confined to periodical headache; in 2, to deafness and purulent discharge from the ear; in the remaining cases the most prominent symptoms of the chronic stage were headache, vomiting, amaurosis, convulsions, paralysis, and diminution of the intellectual faculties: the duration of this chronic stage varied from one month to three years.

"Nine of the patients died with symptoms closely resembling those of acute hydrocephalus; a few with symptoms of softening of the brain; the rest of consumption, smallpox, &c.

"The volume, number and site of the tuberculous masses varied considerably in different cases: in one case twenty tubercles were found in the right hemisphere; in another, seventeen; frequently, however, they were single."

For the table itself we must refer to the Society's volume. We pass to Dr. Green's account of the history, symptoms, and diagnosis of the disease.

Tubercle of the brain is rare in adults. But, in children, it is comparatively frequent. Dr. Green has observed it in 26 instances, out of 1324 cases of acute disease, or in 1 case to every 51 of such.

Age.—If we may judge from 75 cases, the age at which this disease most frequently occurs appears to be from three to seven years, inclusively.

Number.—They are often single—often numerous. In one case there were 20 in the right hemisphere—in another 50 in the cerebrum and cerebellum.

Volume, varies from the size of a small nut or bean to that of the double fist.

Seat various, most ordinarily in the substance of the hemispheres. In the 30 contained in the table, the tubercular deposit existed eleven times in the hemisphere of the cerebrum; nine times in the cerebellum; seven times in the cerebrum and cerebellum together; and twice in the cerebellum and pons Varolii, together. But Dr. G. has notes of two cases in which the tubercle was confined to the pons Varolii.

Attendant Lesions.—"In many cases, even when the tubercle is of considerable size, we cannot discover the slightest change in the surrounding nervous substance, or in the neighbouring membranes. The gradual development of the tubercular mass seems to pass unheeded by the central nervous system. In other cases the membranes adhere to the cortical substance, over the site of the tubercle, and are more or less infiltrated and thickened. Sometimes, when the tubercle is large, the convolutions are flattened or completely effaced. The colour and consistence of the nervous substance, immediately surrounding the tubercle, present a great variety of modifications. It may be slightly injected and softened to the depth of a few lines only; or the softening of the nervous tissue, with or without injection, may extend to the central parts of the brain. In some cases nearly the whole of the cerebellum is reduced to a mere pulp. In a few rare examples, on the contrary, the surrounding nervous substance is more pale and of a denser structure than is natural; sometimes it is soft and of a straw-yellow colour. I have never seen any appearance of abscess or of true infiltration of pus in the immediate vicinity of a cerebral tubercle." 200.

There are other lesions, more complications than consequences.

Cause.—Dr. Green cannot satisfactorily account for the peculiar tendency of young children to this affection. The first dentition is its principal epoch—in some cases it has followed convalescence from an exanthematous disorder—in several the patients have been cut off by tubercular disease.

Symptoms.—Dr. G. arranges these under two stages, the chronic and the acute.

Chronic stage.—Its duration varies from six weeks to two years. He has grouped these cases under three classes:—"In the first class the disease commences with headache, and then gives rise to various lesions of sensibility or of muscular power.

"In the second class, it begins with convulsions or epilepsy, which gradually terminate in paralysis.

"In the third class the first symptom observed is paralysis of one of the limbs.

1st Class. "Here the disease," we quote, for we cannot render more concise, Dr. Green's description, "commences with headache, which is by far the most constant and characteristic symptom of cerebral tubercle; it formed a prominent feature of the disease in seventeen of the twenty cases.

"The headache is often very severe and of an obstinate nature, preventing the patient from sleeping at night, changing the temper, and sometimes eliciting acute cries like those of hydrocephalus. The seat of the pain is generally in the forehead, but in a few cases where the tubercular mass occupied the cerebellum, the pain was seated in the occiput, and extended down towards the neck. This severe pain is, sometimes, the only symptom which exists; in other cases, after having been present for a few days or perhaps for several months it is succeeded by other symptoms, to be presently noticed.

"The attacks of headache are occasionally associated with vomiting, which recurs on each exacerbation of the pain, and cannot be traced to any disorder of the digestive organs. This chronic or sympathetic vomiting was observed in seven cases. The bowels may be constipated at these periods, but costiveness is less frequent than vomiting, and both symptoms are much more allied to acute diseases of the brain.

"The symptoms which follow in the train of headache are extremely varied:

they chiefly consist, however, in lesions of the senses, the muscular power, or the intellectual faculties. The child's temper may undergo a notable change, and the intellectual faculties may become dull, but the disturbance or loss of the latter is rarely observed, except in cases of long standing, and towards the termination of the disease.

"Convulsions sometimes occur at irregular intervals and terminate in partial or total paralysis of one or more limbs; in other cases we merely find a weakness of certain muscles, not amounting to paralysis; the child stumbles as it walks along, and progression is much impeded: particular muscles also may be affected. Thus in one case the only lesion of the motor power observed for some time was a peculiar convulsive movement of the muscles of the eye-ball, by which it was incessantly jerked inwards. In a few cases strabismus occurs.

"The symptoms connected with derangement of the sensibility are, loss of hearing, feebleness or total loss of sight, and a diminution of the cutaneous sensibility on one side of the body. The various symptoms just noticed are seldom permanent; the headache often disappears after having existed for several months, and returns again: the strabismus and amaurosis may also disappear, but the paralysis generally persists, especially when the limbs are affected by it."

2d Class. In "these cases the disease commences suddenly with convulsive attacks or an access of true epilepsy: these recur at various intervals, and gradually terminate in paralysis or coma. The convulsions may be general or partial, and are often followed by contraction of one or both extremities on the same side of the body, or the head may be drawn to one side, and remain in that position for a considerable length of time. I have not noticed the deviation of the mouth or tongue, which seems to be characteristic of acute hydrocephalus. The convulsive affections often present some peculiar features. Thus, in one instance, the disease commenced with nervous tremor of the left arm, which lasted for six weeks, and then terminated in epilepsy: in another case, several attacks of convulsions were followed by a peculiar rotatory motion of the head: in a third, they were succeeded by squinting, and a lateral motion of the lower jaw. These convulsive attacks are rarely attended, as the headache is, with vomiting or constipation of the bowels.

"Instead of convulsions, the first symptom observed may be a sudden attack of epilepsy, which always terminates, after a longer or shorter interval, in general or partial paralysis. Convulsive movements existed in twelve of the twenty cases, and epilepsy in five." 205.

3d Class. The disease commences with paralysis of one or more muscles, or organs of sense. Dr. Green relates a case in point. He observes that a general summary of symptoms so diversified is impossible. But the chief and most important is headache—after that come partial or general convulsions, epilepsy, paralysis or contraction of certain muscles or limbs, change of temper, and amaurosis.

Acute stage. There was such in thirteen out of thirty cases. In most cases, it consists "in a succession of symptoms of an irregular character, and more or less allied to those of acute hydrocephalus, or softening of the brain. Thus the acute stage of cerebral tubercle may commence as the third stage of acute hydrocephalus, or the symptoms of the different periods of this latter disease may run rapidly into, and be mixed up with each other. The duration of the acute stage varies from eight hours to eighteen days." Sometimes there are general convulsions which terminate in fatal coma, or they may be so violent as to cut off the patient in a few hours. Dr. Green observes:—

"The irregularity of the symptoms which occur in the acute stage of cerebral tubercle, is, I conceive, a very important point in the history of cerebral disease amongst children. Authors frequently mention the occurrence of anomalous cases of hydrocephalus, of cases in which the first stage of the disease was wanting. Is it not probable, from what has been said, that many of these hitherto unexplained anomalies depend on the complication of acute hydrocephalus, with cerebral tubercle, or, to speak more correctly, on the fact, that the acute

stage of cerebral tubercle generally consists in irregular hydrocephalic symptoms?" 207.

Diagnosis. Dr. Green admits its difficulty. This, he observes, "depends not only on the irregularity of the symptoms, but on the length of time which often separates the appearance of one symptom from another. A lapse of several months may occur before the headache is followed by any other sign of cerebral disease, still our diagnosis must be founded on the succession of certain symptoms. The disease, it may be remarked, almost always occurs in children who manifest signs of a scrofulous diathesis. When, under these circumstances, a child has suffered for some time from severe headache, when the headache is followed by convulsive movements, some paralytic affection, amaurosis, contraction of muscles, occasional vomiting, accesses of fever, and the train of symptoms already mentioned, and when these symptoms succeed each other at various intervals of weeks or months, we have very great reason to believe that the child has tubercle of the brain."

He has never seen independent chronic softening of the brain in children—he supposes its symptoms would be similar. With chronic meningitis it may be confounded.

"The points of resemblance are the duration of the disease, the change of temper, the occasional headache, and the contraction of muscles, which occur in chronic meningitis. In this latter disease, however, the headache is not so severe or constant: we more frequently observe irregular accesses of fever, and the only permanent lesion of the motor power, which I have seen, was a peculiar flexion of the muscles of the hand and foot.

"The paralysis, amaurosis, epileptic attacks, contraction of various muscles, are peculiar to cerebral tubercle, at least as far as my experience goes." 208.

Of *Treatment* we need say nothing.

Dr. Green's paper is a valuable contribution to pathology.—*Med. Chirurg. Rev.* from *Royal Med. Chirurg. Trans.* vol. xxv.

SURGICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL SURGERY.

52. *Dissecting Aneurism.*—In the No. of this Journal for Nov. 1838, two cases of this rare form of disease were recorded, one by Dr. Pennock and another by Dr. Goddard. A third case is related by Dr. Pennock in his edition of Hope on the Diseases of the Heart, and in that work he also gives the detail of another case which came under the observation of Dr. Washington, of New York. Morgagni also saw two cases, Laennec one. Gnthrie two, Shekelton one, and an eleventh case has been recorded by M. Tessier, in the *Giornale delle Scienze Mediche*, July 1842, of which the following abstract is given in the *Gaz. Méd. de Paris*, 13th August, 1842.

This last case occurred in a man 60 years of age, who was brought to the hospital in a state of insensibility, pale, and almost pulseless. He had been under treatment for three days, and had been twice bled. He died almost immediately on admission, and before any remedies could be applied.

On *post-mortem* examination the pericardium was found full of coagulated blood, but the opening from which it escaped could not be discovered. In the three anterior fourths of the ascending aorta, the external coat was separated from the middle, while, in the posterior fourth of the vessel, these membranes still remained in contact. The same disposition was found in the arch of the left side of the ascending and abdominal aorta, and extended inferiorly into the iliac, femoral, and popliteal arteries, while, superiorly, the innominate and the two carotids were similarly affected round the whole calibre of the vessels. In all these situations the arteries were composed of two distinct canals, the one, between the outer and middle coat, full of blood, and the other, the natural cavity, empty. The intercostals, and every other branch which rises from the

aorta, the anterior aspect of the left auricle, and the posterior part of the right, were in a like condition. About a line from the origin of the innominate the two internal coats were divided, and their superior border formed a spur-like projection in the interior of the artery. Numerous points of ossification were scattered over the ascending aorta.

53. *Dislocation of the Knee.*—In our preceding No. p. 215, we noticed a case of this rare accident related by Mr. Rose, and we are now able to give an account of three more cases recently recorded.

The first case occurred in the practice of Mr. Jonathan Toogood, of Bridgewater, and is related by him in the *Prov. Med. Journ.*, June 18th, 1842. The subject of it was a strong athletic man, who on the 5th December, 1806, fell from the forepart of a waggon heavily laden with coals, and entangling his foot in the framework of the shaft, was dragged a very great distance before he was released. Mr. T. saw him two hours after the accident, and found the left knee very much swollen; the tibia, fibula and patella driven up in front of the thigh, and the os femoris occupying the upper part of the calf of the leg, the inner condyle being nearly through the skin. It was a *complete dislocation*, and the appearance of the limb was so dreadful that Mr. T. despaired of being able to reduce it. By placing, however, two men at the thigh, whilst Mr. T. extended the leg, reduction was immediately effected. The whole limb was placed in splints, and the strictest antiphlogistic treatment observed with perfect quiet. At the expiration of a month the patient was allowed to get up, and he eventually recovered very good use of his limb, and walks with so little inconvenience that he resumed his business as a waggoner, and sixteen years afterwards Mr. T. saw him walking by the side of his team with very little lameness.

A case of partial dislocation of the knee is recorded in the same Journal by Mr. J. BALLARD PITT. It occurred in a young lady, and was produced by a fall down stairs. The internal condyle of the right femur projected considerably inwards, and the external tuberosity of the tibia outwards. The patient complained of severe pain similar to cramp, down the outer side of the leg. She was placed on her back and gradual extension and counter extension made, which soon brought the joint into its former position. Lateral splints were put on, and bandaged so as to allow of leeches and lotions being applied. Inflammation with swelling, pain, and tenderness of the joint supervened, but was subdued by the early and repeated application of leeches and evaporating lotions. The patient regained the use of the limb.

The third case is recorded by EDWARD PARKER, Esq., of Liverpool, in the *Lond. and Edin. Monthly Journ.* for December, 1842. The subject of it was a man 22 years of age. A heavy spar had fallen on him, and caused his leg to double under him. The limb was found to be slightly flexed, the patella loose and floating, a large depression behind and on each side of it; the condyles of the femur were felt projecting very distinctly in the ham, while the heads of the tibia and fibula could be felt to occupy a position in front of the lower end of the femur. The usual movements of the joint could not be performed, and the patient complained of very considerable pain. It was evident, indeed, that the knee had sustained a dislocation, of that form in which the tibia and fibula are thrown anterior to the femur. The reduction was effected without much difficulty in the following manner, by Mr. Gill and Mr. Stubbs, who happened to be in the hospital at the time the man was brought in. One assistant seized the limb, by grasping the thigh, while another made extension from the ankle; the operator then placed his own knee in the ham of the patient, and pushed down the head of the tibia with his left hand, while he grasped the leg with his right hand, and tried to bring it to a right angle with the thigh. By this combination of extension and flexion, the reduction was soon accomplished.

Considerable swelling of the joint took place, which was subdued by perfect rest and the constant application of spirit lotion. In a fortnight, partial motion was commenced, and in a month from his admission, he left the hospital, able to walk about, but having some slight degree of stiffness in the joint.

A case of dislocation of the knee was read before the Royal Medical and Chirurgical Society, by W. H. Coote, on the 26th April, 1842, but the details of it we have not yet seen.

51. *Compound Fracture of the Leg—reunion interrupted by Gestation.*—R. H. OSWALD, Esq., of the Isle of Man, relates in the *Prov. Med. Journ.*, Sept. 3, 1842, a case of compound fracture of the bones of the leg, in a woman 28 years of age, and in the eighth month of pregnancy, in which he thinks the union of the fracture was interrupted by gestation.

The accident was produced by the kick of a horse, which fractured both bones of the right leg, about their middle half. The foot and ankle were doubled outwards, and a spicula of bone protruded through the integuments covering the shin. This spicula was a loose portion of the lower end of the fractured tibia, and was surrounded with other loose and comminuted portions of the same end. The wound of the integuments was enlarged and two fragments consisting of the outer solid plate of the anterior surface of the tibia, one an inch, the other one inch and a half in length, besides other smaller portions, were removed. The limb was then extended to its proper position, and carefully set in a smoothly scooped wooden splint, without any bandaging whatever, the splint being only secured on a pillow, moulded into a form which embedded it; water dressings were then applied, and assiduously persevered in for many days.

There was very moderate reaction—no constitutional disturbance or pain in the limb; the wound digested kindly, and symptoms of the adhesive process, and of granulations filling up the cavity, were strikingly remarkable towards the close of the second week; and the tumefaction of the whole limb, which had been considerable, began to subside, and pit on pressure about the fourteenth day. It was, therefore, bandaged by the many-tailed bandage, and a portion of spirits added to the water dressings; a more generous diet was prescribed by allowing an addition of an egg or a slice of ham to breakfast, and a cutlet of meat or a basin of broth at dinner.

On the 23d Sept., twenty-eighth day after the accident, the leg for the first time was removed from the splint, and fracture found quite flexible, as much so as on the first day. Where the callus ought to have been formed, the space was soft and pulpy. The external wound was filled up, and healed to the size of half an inch or less, and the swelling of the limb was almost gone. The newly formed cicatrix seemed to cover a large mass of granulations. The many-tailed bandages was again applied, and the limb well secured with splints, as labour was daily expected.

On the 28th Sept. the patient was delivered after a labour of eight hours.

On the 1st Oct. the dressings were removed and the fracture found quite flexible. The patient was forbidden to suckle her child.

Oct. 11th.—Wound cicatrised; fracture still flexible, but feels rather stiffer and firmer in the deep-seated parts of the limb, as if from a degree of remission in the fracture of the fibula; callus is so pulpy that it appears to fluctuate to the touch. Some change in the position of the leg has occurred, for the toes are more turned outwards than natural. Applied the splints with still greater care to accuracy. Continue a generous diet, and let her have a glass of port wine or of porter twice a day.

Oct. 25th. Callosity of fracture considerably increased; an ossific firmness is perceptible in the proper site of the callus; patient much emaciated.

Nov. 16th.—Callus still bends slightly, but is stiff.

Dec. 5th.—There is now a prominent node of bone at the seat of fracture; leg will not bend.

June 10th.—The limb is quite straight and the cure complete.

55. *Varicose enlargement of the external abdominal Veins.*—Two cases of varicose condition of the external abdominal veins, dependent upon disease of the liver, are recorded in the *Provincial Medical Journal*, (July 2, 1842,) by T. B. PEACOCK, Esq., Pathologist to the Royal Infirmary, Edinburgh.

The first case occurred in a groom, 38 years of age, of very intemperate

habits, labouring under jaundice and anasarca and ascitis. In his epigastrium there was a swelling, elastic and movable, under the integuments, which, when he was in the recumbent position, was smaller and less conspicuous, but became full and prominent on his standing up. Into this tumour a large vein passed up from the groin on each side, and these vessels by their union seemed to constitute its chief bulk, and then to pass down below the edges of the ribs. The veins coming from below were fully the size of the forefinger, and were remarkably contorted. The tumour was at least ten inches in diameter, and was situated below, and its centre somewhat to the right of the zypoid cartilage.

After death the body was examined and the parietes of the abdomen were found much loaded with fat; the tumour was less than during life, and proved, as had been anticipated, to consist of the union and numerous interlacements of the two large veins, proceeding from below, embedded in a dense cellular tissue; several of the venous branches in the tumour were of sufficient size readily to admit the point of the forefinger. From the upper part, large vessels passed out, entering the mediastinum, and communicating with branches of the internal mammary veins. The liver was extremely snail, and exhibited the usual appearances of cirrhosis, being of a deep orange-brown colour, and studded over its surfaces, more especially on the under side, with small mammellated masses, varying from the size of a pea to that of a marble. Its inferior edge was thick and obtuse; on section, its texture resisted the knife, and was extremely firm; the surface exposed displayed a similar tuberoso appearance to the exterior, and the small masses were separated from each other by a paler membrane. The whole organ was remarkably free from blood, and weighed $37\frac{3}{4}$ ounces; the gall-bladder contained several small calculi, but the ducts were, throughout, unusually large; no obstruction was detected in any of the venous trunks, and the remaining viscera of the abdomen, and those of the thorax, were healthy, the heart only displaying some degree of hypertrophy, with dilatation of the left ventricle.

The second case occurred in a shoemaker, *ætat.* 45, also of intemperate habits, and who also became affected with jaundice, anasarca and ascites. Tumours similar to that in the preceding case existed in this; veins following the course of the external epigastric artery entered the tumour from below, and others passed out above, crossing over the thorax.

On post-mortem examination, the veins were found, after freely anastomosing in the tumour, some to proceed over the chest, to communicate with the branches of the external mammary and intercostal veins; others to enter the mediastinum, and unite with the internal mammary veins. The internal epigastric veins were also greatly dilated, and were in connection with those of the tumour. The liver was small, weighing only 41 ounces, and its surface irregular, and covered with a thick layer of opaque membrane. A section displayed the character of cirrhosis, though to a less degree than in the former case; nor was the organ so devoid of blood, being of its usual brown colour. The gall-bladder and ducts were healthy, and the former distended with viscid bile; the spleen was very large, weighing $32\frac{1}{2}$ ounces, and firmer than natural; the kidneys were in an advanced state of granular degeneration, and the serous covering of the intestines showed marks of recent inflammation; the stomach contained much dark, grumous blood, from which the duodenum was entirely free; at the cardia the mucous membrane seemed denuded of its epithelium over a space about the size of a half crown, beneath which the vessels were turgid with fluid blood; the thoracic viscera were healthy, and the brain exhibited no sign of disease, with the exception of the bloodless state of its vessels, in which it corresponded with the rest of the system. No disease affecting the vena cava or its branches was detected.

These cases constitute a useful compliment to the valuable paper on varices in our last No. by Dr. Watson.

56. *Gun-shot wound of the Shoulder-joint treated by excision of the Humerus.*—By P. T. H. BADDELY, Bengal Medical Service. The following case, illustrative of the power possessed by nature in effecting the restoration of injured joints, and the wonderful rapidity and perfection with which that process appears to

have been effected in this instance, is deserving of attention, and is a most interesting fact, both in a pathological and physiological point of view.

The safety, too, with which the operation for excision of the head of the humerus may be performed, even under circumstances somewhat unfavourable, together with its decided superiority over that of amputation at the shoulder-joint, whenever the latter may be at all dispensed with, must arrest the attention of every observer.

CASE.—About the latter end of February 1840, a Hindoo soldier, aged 21, attached to one of the regiments stationed at Candahar, in Affghanistan, disgusted at having been addressed in a surly manner by a subordinate native officer, went at once to his quarters, and throwing himself on his bed, discharged his loaded musket into his left shoulder, pressing at the same time the trigger with the toe.

On examination of the man, half an hour after the occurrence, two circular wounds on the left shoulder were observed corresponding to the entrance and exit of the bullet—one, about an inch below the coracoid process of the scapula—the other, larger and more ragged, immediately beneath the outer angle of the acromion, the edge of which was torn off. Through the latter, the finger was easily passed into the joint, where it encountered synovial membrane and rough fragments of the shattered bone. Not knowing to what extent lesion of the parts, more immediately connected with the vitality of the limb, had taken place, and the hemorrhage being moderate, I contented myself with enlarging the wound, made by the ball's exit, for the purpose of relieving tension of the swollen parts, and for admitting of the extraction of a piece of bone, the size of a hazel-nut, which proved to be a portion of the articulating surface of the humerus. Under the use of cold water dressing, and moderately active antiphlogistic measures, the inflammation, &c. gradually subsided, and the wounds healed, with the exception of two fistulous openings, giving passage occasionally to small portions of bone, and discharging matter, which, becoming rather profuse, and the man's health rapidly declining in consequence, an operation for the removal of the splinters of bone and head of the humerus was determined on, and performed on the 10th of April, six weeks after the infliction of the injury, in presence of Messrs. Colquhoun, Lock, and Healey, of the Bengal Service. The patient seated and supported with his arm a little removed from the side; a perpendicular incision, from the point of the acromion, nearly to the insertion of the deltoid, was made down to the bone—on which venous hemorrhage, to considerable amount, took place. On drawing asunder the edges of the wound, the lacerated articulation was brought into view, enveloped in a dense mass of fibro-cartilaginous substance, the result of the previous injury and inflammation. Numerous fragments of bone were removed (twenty in number) as they presented themselves to view; and the disengagement of the fractured head of the humerus was attempted, but the strong cartilaginous adhesions, surrounding the bone, rendered that impossible. In order to accomplish this step of the operation, a transverse incision, to the extent of three inches, was next made, at right angles to the former, through the deltoid posteriorly, an inch and half below the acromion—when, with a probe-pointed bistoury guided on the forefinger, the dissection was carefully continued all round, and after some time the insulation of the head of the bone completed sufficiently to admit of a plate of metal being passed behind it, for the protection of the soft parts preparatory to the application of the saw. The man now became faint, and while in that state, the head of the bone was partially turned out and taken off: the whole of what is denominated the anatomical head and neck had been shot away, and an oblique fissure ran through the portion of the bone, which was removed an inch and a half below the tubercles, with a common amputation saw; the glenoid cavity not being injured, was left untouched. On clearing the cavity of the wound from fragments of bone, here and there impacted in the substance of the soft parts, the posterior circumflex artery was cut—pressure above the clavicle commanded the hemorrhage, and the vessel was secured. The lips of the wound were now brought into apposition, and secured by means of four sutures and straps of adhesive plaster, covered with lint soaked in compound tinct. benzoin. A pad was placed in the axilla,

and the arm supported in a sling, and secured to the side by a bandage; copious suppuration of healthy matter was soon established, and the man continued to improve daily; so that at the end of a few weeks the wound was almost entirely cicatrized, and he was beginning to make use of the hand and forearm.

At the expiration of three months and a half (at which time the drawing was taken) his health was completely re-established, and he had become fat and strong. The use of the hand and forearm was complete, and he could already separate the elbow from the side to the extent of six or eight inches.

No perceptible difference in the length of the two limbs was observable. A very slight oozing of matter still continued from a fistulous opening in the site of the ball's entrance, arising probably from the presence of some small foreign body driven in by the ball.

In February, 1841, ten months after the operation, Mr. Healey describes the man as exhibiting the same healthy, robust appearance, having recovered considerable power and use of the limb, which he was enabled to elevate, that is to say, at an angle of about 70° , nearly at right angles to the trunk, and bring it forwards almost to the natural limit. Scarcely any perceptible difference in the length of the two arms could be discovered; a minute fistulous opening existed, giving discharge from time to time to a few drops of matter.

REMARKS.—A chain-saw is indispensable, I conceive, to render this operation expeditious, when the parts have become at all consolidated by previous inflammation.

Had the operation been performed immediately, or on the subsidence of the inflammation in the first instance, the difficulty experienced in disengaging the bone from the surrounding parts would of course have been avoided, and the operation much simplified.

It is worthy of remark, as showing the danger of inoculation with the fluids of certain diseased parts, that while engaged in the above operation, I received a very slight wound on the forefinger, just sufficient to raise the skin, which nevertheless in a few days inflamed and degenerated into an obstinate phagedenic ulcer, causing considerable constitutional irritation, and terminating, after two months of great suffering, with loss of the joint.—*Proceedings of Surgical Society of Ireland, in Dublin Medical Press, Dec. 14, 1842.*

57. *Successful Amputations at the Shoulder-joint.*—Dr. Houston stated to the Surgical Society of Ireland, that he had amputated at the shoulder-joint, in the City of Dublin Hospital, in a case in which the arm had been broken off by machinery a few inches below the joint. A flap being made of the deltoid muscle by one sweep of the knife, and the upper part of the joint enveloped by its articular muscles exposed, an incision was made transversely through these textures, and the head of the bone thereby fully exposed; it was then found easy, notwithstanding the shortness of the bone to be laid hold of, to push up the head so as to get the knife round its inside, and thence to make a flap of the parts between it and the axilla. In this incision the nerves and the blood-vessels were all divided equally and at once, and the hemorrhage was arrested with facility. The operation was successful; and the point which induced him to mention the case at all was, that there was no difficulty in disarticulating the head of the humerus from the socket of the joint, after having made a flap of the deltoid.

Dr. O'BEIRNE also maintained that he had a case at the siege of Salamanca of a Spaniard who was shot in the shoulder, and the parts much injured by the head of the humerus; he cut down on the head of the bone, amputated, and in three weeks after, the man was removed to the rear in a convalescent state.—*Ibid.*

58. *Erectile Tumour in the Ham.*—A remarkable case of erectile tumour presented itself very lately at the North London Hospital. The patient, a young subject, was brought into the house, having a soft, doughy tumour in the popliteal space, which had been already treated in various ways, leeches, bandaged, had a seton passed through it, &c. &c. There was no pulsation in the tumour,

neither did it lie over, but to the inner side of the artery. It was held by all who manipulated it to be a melicerous or soft steatomatous tumour. Mr. LISTON pushed a narrow bistoury into the tumour, and rotating the knife half round on its axis, a stream of arterial blood immediately started into the middle of the operating theatre. The operator did not hesitate a moment, but proceeded at once to remove the tumour, which had now shrunk very much in size. It was carefully detached from its connections, and speedily turned out. A single small vessel was all that required a ligature. On examining the mass which had been removed, it was found to be formed of *erectile tissue*, and appeared to have been developed either in or immediately over the tendon of the semi-membranosus muscle, after it had turned over the inner condyle of the femur.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Feb. 1842.

59. *Bony Union of the neck of the Femur within the Capsule*.—ROBERT HAMILTON, Esq. states that he was shown by Professor TILANUS, in the Pathological Museum of the Hospital St. Peter, at Amsterdam, three specimens of united fracture of the neck of the thigh bone within the capsule, two dry and one moist, which had a distinct compact line of ossification running across, very close to, and partially through the head.—*Lond. Med. Gaz.*, Jan. 6, 1843.

60. *Dislocation of the Ankle—Tibia outwards, without fracture of either malenlus*. By EDWARD PARKER, Esq.—Alexander M'Cauly, aged 50, admitted into the Northern Hospital, Liverpool, July 21, 1841, under Mr. Stubbs, states that he fell a height of several feet, from some part of the rigging, on the deck of a vessel, and that his foot doubled under him. He was immediately brought to the hospital, his right foot presenting the following appearances:

The sole of the foot is completely turned inwards, the outer edge looking downwards; the lower end of the fibula projects considerably, the integuments covering it being much stretched; the inner malleolus can be felt, but seems to be higher than usual. About an inch, or an inch and half, above the inner malleolus, a deep depression can be felt, which, he says, existed before the present accident, and was caused many years since by a fracture of the leg. On bending the leg and making extension, at the same time twisting the foot outwards, the reduction was easily effected. On again carefully examining the parts, no fracture of any of the bones entering into the formation of the joint could be detected; the depression above alluded to was readily distinguished, and allowed the finger to be inserted into it. It was evidently an old, badly united fracture of the tibia; the lower portion having approximated to the fibula, had caused the articular surface of the tibia to incline obliquely from side to side, instead of presenting a flat surface for the astragalus. From having in the fall alighted on the outside of the foot, this was easily dislocated in the manner described, without causing fracture of either malleolus, a complication very generally present. After the reduction, the foot continued to be a little inclined inwards; but this, he says, had always been the case since the leg was fractured.

For the first three or four days it was kept on its outside, and fomentations were applied. Afterwards it was placed in a junk; the pain and swelling soon subsided, and in the course of a few weeks he was able to leave his bed.

Sept. 27. About nine weeks after the accident he left the hospital, being then able to walk a considerable distance with little or no inconvenience.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Dec. 1842.

61. *Dislocation of the lower end of the Ulna forwards*.—The following example of this very rare form of dislocation, is recorded by Mr. Parker, of Liverpool, in the *London and Edinburgh Monthly Journal of Medical Science*, Dec. 1842.

John Dalton, aged 40, applied at the hospital, August 9, 1841, under the following circumstances. States that he is a carter, and falling down, the shaft of the cart fell upon his hand and forearm, in such a way as to supinate them forcibly. He complains of pain in the left wrist. The forearm is supinated,

and cannot be pronated, the attempt causing much suffering. The wrist-joint can be flexed or extended without much pain. On looking at the back of the wrist, the appearance is characteristic; the natural prominence of the ulna is wanting; an evident depression exists, as if the lower end of the ulna had been dissected out; it can be traced, however, on a plane anterior to the radius, its button-like head being distinctly felt under the flexor tendons.

Several ineffectual and very painful attempts were made to accomplish the reduction, by pushing the head of the ulna into its natural situation. This was at last effected by seizing the hand to make extension, (counter-extension being made at the elbow,) then *forcibly pronating* the hand, at the same time pressing backwards the dislocated head of the bone with the fingers of the left hand. After persevering for a short time, the bone was felt to assume its natural position, the wrist acquired its usual appearance, and the ordinary movements of the joint could be readily performed. There was no tendency to redislocation, and the man was dismissed, with directions to keep the joint quiet, and to foment it. He attended as an out-patient for two or three days, after which, complaining of nothing but a little weakness in the part, a bandage was applied, and ordered to be worn for a short time.

62. *Reunion of Fractured Femur at an advanced age.*—Dr. W. F. HENDERSON records in the *London Medical Gazette*, (Jan. 13th, 1843,) a case of oblique fracture of the femur near its middle, in a woman eighty-nine years of age, in which, on the forty-fourth day, firm union was found to have taken place.

63. *Local Treatment of Chancres by Sulphate of Copper and Cyanuret of Mercury.* By Dr. STROHL.—The more rapidly primary syphilis is cured, the less likely are secondary symptoms to appear. The first object is most easily attained by cauterizing. Sometimes, however, this method is inapplicable; for instance, when the sore is very extensive, or much inflamed. In such cases, the author employs the sulphate of copper. The sores are dressed five or six times a day with charpie, which has been soaked in a solution of about a grain and a half of sulphate of copper to an ounce of water. Simple chancres, when thus treated, usually heal within twelve days. Dr. Strohl assures us, that he cures complicated chancres in an equally short time with an ointment composed of two grains of cyanuret of mercury to an ounce of axunge. This ointment is spread upon a piece of linen corresponding to the size of the sore. This dressing is apt to be painful at first; and it must occasionally be taken off, after it has been on for an hour or two, and the remedy must be applied in a weaker form. The pain is said to be most violent in half an hour or an hour, and frequently ceases entirely in two or three hours. When the chancre is extensive and painful, after the ointment has been on from four to ten hours, according to the sensibility of the patient, it is dressed with mercurial ointment, or opium cerate.

If the edges of the chancre have flattened, if the centre is cleaner, the pain less, and the suppuration healthy, (which may occur after the first application of the cyanuret of mercury, but, at any rate, not later than the fourth), the treatment with the sulphate of copper is finished.—*Lond. Med. Gaz.*, Nov. 1842, from *Oesterr. med. Wochenschrift*.

64. *Nitrate of Silver in bed sores.*—Mr. HENRY JACKSON, in a paper read before the Sheffield Medical Society, extolled the efficacy of the nitrate of silver for the cure of bed sores. He mentioned one case in which “all the known remedies had been tried without avail,” and in which a solution of nitrate of silver ten grains to the ounce, applied by means of a camel-hair brush, over every part exhibiting the slightest appearance of inflammation, two or three times a day, until the skin became blackened, and afterwards occasionally, answered perfectly.—*Prov. Med. Journ.*, Dec. 31, 1842.

65. *Stricture of the Urethra.*—M. CRUVEILHIER, after enumerating the various diseases to which stricture of the urethra may give rise, states that writers have erred in enumerating many organic alterations as the cause of permanent stric-

ture. In all his dissections, he has found but one cause present, viz. fibrous degeneration of the urethral canal at the point of stricture. This alteration of structure may only occupy one point of the canal, and constitute a circular narrow stricture, or it may extend over a greater surface, and narrow the canal through an extent of from six to twelve lines. In some cases, the diseased structure is confined to the mucous membrane, in others, to the whole thickness of the coats of the urethra. This fibrous transformation, he thinks, may be owing to two causes, either to chronic inflammation of the mucous membrane, or to ulceration; the last being the most probable, as he cannot understand how the inflammation could be limited to the membranous portion of the urethra, at which point these strictures constantly occur. If these facts are admitted, they prove, says he, the worthlessness of forcing a passage by means of catheters and conical-pointed sounds, as well as of cauterizations, and the necessity of removing the constriction by means of gradual dilatation, continued for a very long period. These observations seem also to prove that the strictures have a constant tendency to return, and that stricture once produced can never be completely cured.—*Edin. Med. and Surg. Journ.*, Jan. 1813, from *Archives Gén.*, Sept. 1812.

66. *Abscess of the Brain.*—In the *Archives Générales de Médecine*, a case of abscess of the right lobe of the brain is published, involving some interesting and important facts. A girl, a servant at a public-house, in a struggle with some drunkards, received a blow from a bottle on the lateral and upper part of the forehead, which caused a large and very contused wound, exposing the bone. She was admitted into the hospital on the 9th of December, 1811, under the care of M. Blandin, and on the 13th of January, after the separation of several sequestra, the wound had cicatrised. The cure, however, was only apparent; a local pain remained, which increased in severity, causing the patient to scream loudly and prevented her moving her head. Vomiting and insomnia followed, but the intellect remained clear, and also all the other faculties. The pulse continued regular, but the patient gradually getting worse, and her general health evidently suffering much, M. Blandin, *en désespoir de cause*, proceeded to trephine, thinking the irritation might be caused by a sequestrum or a purulent effusion. A piece of the cranium about an inch in diameter was accordingly removed, but no fracture was discovered; the parts beneath, however, presented an equivocal feeling of elasticity to the finger. Under these circumstances, M. Blandin determined to wait, in the hope that the abscess, if there was one, would open spontaneously, but after the lapse of some time, no such result ensuing, an exploratory puncture was made with care, but without any advantage. For a time, after these operations, the poor girl seemed to be relieved, but the pain soon became more severe, and emaciation and prostration, followed by a severe attack of erysipelas, ushered in death. The opening made in the cranium by the trephine had not closed, and the dura mater was intact. On passing in the finger after death, the same elastic feeling was perceived as during life, and on examination, it was found to correspond to a large circumscribed encysted abscess in the right lobe, separated from the dura mater by a thick layer of cerebral substance. It is clear that if M. Blandin had incised this layer, the abscess would have been discharged, and the patient had a chance for life.

M. ARAN, the reporter of the case, in his remarks upon it, draws attention to the great neglect with which the trephine is now treated, and although far from an advocate for its general use, he equally condemns its total abandonment; he also thinks that in serious cases, such as that under notice, the surgeon not deriving benefit from the treatment, should not hesitate to plunge a narrow bladed bistoury into the brain itself, and to some depth if required.—*Prov. Med. Journ.*, Dec. 17, 1842.

67. *Lardaceous Tumours of bone.*—Mr. HODGSON exhibited to the Birmingham Pathological Society, (Oct. 1, 1842,) a specimen of very extensive disease of the bones which occurred in an intelligent boy of four years of age. In the early

stage of the case, when Mr. Hodgson saw it with Mr. Thomas Chavasse, the tumours were not large; there was one small tumour in the lower jaw and another in the parietal bone, but they soon increased; then another made its appearance in the orbit, and protruded the eye; another appeared at the back of the head, and grew enormously, becoming as large as the head itself. The protrusion of the eye increased to a great extent, and yet, what was very remarkable, without loss of vision. The intellect also continued unimpaired, though the tumours on the head were very large and closely connected with and compressing the brain to a considerable extent; the child's intellect was clear to the very last; he played about the room the day before he died. The tumour in the frontal bone was of a lardaceous character, soft, and yellowish; it extended inwards and caused ulceration of the arachnoid and pia mater. The pleura, liver, and kidney were also diseased.

Mr. Hodgson mentioned another case, which was in the General Hospital some years ago; here the tumour was seated on the back of the head of a boy, and became larger than the head and face of the subject of the disease. In this case, also, the intellect was never affected, the boy appearing to die worn out by constitutional irritation produced by ulceration of the external part of the tumour. His immunity from cerebral and intellectual aberration, Mr. Hodgson thought, could only be accounted for by the circumstances of the disease having begun from without, and gradually extended inwards, the cranial bones being thus softened, and in some degree allowing of expansion taking place, and preventing pressure. In the last mentioned case, the occipital and a large portion of the parietal bones were nearly destroyed. There was no other disease found in other parts of the body. In the former case there was ulceration of the membranes and softening of the cerebral substance beneath the ulcerated portions, yet in neither case was there the usual symptoms attendant upon such a state of parts. Mr. Hodgson knew of no causes to which the diseases could be attributed; a pallid, waxy appearance of the patient might be remarked, but that appearance could not be regarded as a precursor of this form of disease, though it betokened an unhealthy or strumous constitution. He could not consider the medullary disease to be hereditary; he thought hardly two cases could be found in which it had occurred in more than one member of a family, though he knew of one such case in which fungoid disease of the eye had attacked two children of one family in succession; a third child has continued free from it.—*Prov. Med. Journ.*, Nov. 12, 1842.

63. *Fracture of the Clavicle without displacement.*—In some cases of fracture of the clavicle occurring about the middle of the bone in young subjects, displacement of the fragments does not immediately take place, thus giving rise to a risk of an error in diagnosis, by which the ultimate probability of a cure is diminished. A lad, seventeen years of age, was recently admitted into the Hôtel Dieu, under the care of M. BLANDIN, having, a few days previously, fallen upon one of his comrades while playing with him, when he instantly experienced pain, and a cracking sensation about the middle of the left clavicle, where there soon formed a tumour, which, increasing, induced him to enter the hospital. On examination, the swelling was found to occupy the middle of the clavicle; it was about as large as half a hen's egg, ovoid in shape, well circumscribed, colourless, and hard, but sensible to pressure. There was not any deformity of the shoulder, nor any abnormal modification of the axis of the bone, to indicate the existence of a fracture, and although the different movements of the arm caused pain in the shoulder, yet they could be made without much difficulty.

The symptoms in this case would lead to the belief that it was a case of simple periostitis, caused by external violence; but M. Blandin at once decided that there existed a fracture of the bone, having seen a similar case previously at the hospital Beaujon, where the tumour was treated as traumatic periostitis, the patient merely carrying his arm in a sling, until, by a sudden movement of the limb, displacement of the fragments was produced, and clearly demonstrated the existence of a fracture. A second case occurring soon afterwards, M. Blandin

profited by the experience gained from the preceding, and by moving the fragments of the broken clavicle on each other, obtained motion and crepitus. Still these indications were not so clear that M. Marjolin could diagnose a fracture; he was of opinion that the case was one of exostosis, probably syphilitic, and the crepitus he believed depended on an erosion of the osseous surface. In consequence, the patient was left to himself, until a movement of the arm gave proof of the fracture by the displacement of the broken portions of the bone.

Two other cases occurring in young subjects have been admitted since into the Hôtel Dieu under the care of M. Blandin, one of whom was purposely left without surgical assistance, while Desault's bandage was applied to the other. The former soon showed evidences of consecutive displacement; the latter was cured without any deformity following.

The surgeon may diagnose a fracture, without displacement, of the middle portion of the clavicle, when a circumscribed tumour forms in that part in young subjects, consecutive on a fall on the shoulder, and motion of the fragments with crepitus can be detected, there not being any syphilitic taint in the constitution.

M. Blandin considers the elasticity of the periosteum, and the cartilaginous layer covering the bone in young subjects, as the cause of the broken portions of the bone not separating from each other until after a fresh action on the part overcomes the resistance offered by the fibrous envelope. The five patients who came under his notice with this accident were all under twenty years of age.—*Ibid.* from *Journ. de Med. et de Chirurg. Prat.*, July 1842.

69. *Dislocation of the Forearm backwards.*—M. Roux states, with respect to these dislocations, that there are certain points of great importance, more especially as relate to the modifications effected by age, sex, and constitution, which have not been sufficiently attended to by authors. In July last a boy, thirteen years old, of a weakly constitution, fell on the right hand, the forearm being fully extended on the arm at the time. He immediately experienced severe pain in the elbow, which soon became the seat of great swelling. He was admitted into the hospital the next day, when M. Roux diagnosed a dislocation of the forearm backwards, which he reduced at once without difficulty.

A symptom, to which the surgeon drew attention, was, that, notwithstanding the luxation, the forearm was in a state of complete extension, while it is declared in almost all works on surgery, that marked flexion of the forearm is a constant sign of the dislocation backwards. This statement, Roux says, is an error, which has in many cases caused the nature of the injury to be misunderstood. This degree of flexion is to be expected, he adds, in cases of adults, because the inferior extremity of the humerus being thrust forwards, the biceps and brachialis are thrown into violent contraction by the pressure exerted on them. It is otherwise in women and children, and in all persons whose muscular system is but slightly developed, or the bones are not fully formed. The ligaments being soft, and the muscles wanting energy, the forearm may in such cases be in a state of complete extension, although the relation of the surfaces is changed.

The swelling, which rapidly supervenes on the displacement of the bones of the elbow, resulting generally from partial laceration of the muscles and ligaments, is another cause of error. To ascertain decidedly the diagnosis of this luxation, the reunion of three orders of signs is requisite:—1, projection forward of the lower end of the humerus; 2, projection of the olecranon above the transverse line of the tuberosities; and 3, a depression above the olecranon.—*Ibid.* from *Ibid.* Sept. 1842.

70. *The Starch Bandage.*—M. LISFRANC objects to the immediate application of this in simple fracture without displacement—as, after the subsidence of any tumefaction or infiltration, the portions of the bones may become displaced, and yet we are unable to ascertain that this is the case. To ensure the case doing well, he considers the daily inspection of the part is necessary, which may be obtained by making a longitudinal section through the bandage—and with this

precaution he adopts the starch apparatus in simple cases. Where, however, there is displacement of the ends of the fractured bones, the swelling which is present may prevent the surgeon assuring himself of the exact adaptation of the parts; and, after such swelling has subsided, or, by reason of the atrophy resulting from long continued pressure, a considerable interval may be left between the apparatus and the limb. The exact contact of the parts may also disappear during the application or drying of the bandage. But if the fracture be very oblique, even by aid of an opening in the bandage, how are we to readjust the parts when displaced, or how apply any additional compresses or splints that may become necessary?

The number of badly united fractures after the use of the starch bandage that the author has met with confirms his objections to it. It should not be employed in any case having a tendency to displacement, until the callus has become sufficiently solid and straight to prevent any fear of a vicious direction resulting. It is also objectionable when any wound of the soft parts complicates the fracture—especially from the possibility of the occurrence of suppuration, and the difficulty of giving issue to the pus. It frequently occasions by its hardness irritation and excoriations of the skin—a circumstance of some consequence in the aged. Patients commit a great error by attempting to use their limbs too soon after the application of this bandage.—*Medico-Chirurg. Rev.*, Jan. 1843, from *Lisfranc's Clinique Chirurg.* tom. i.

OPHTHALMOLOGY.

71. *Tumours of the Eye and Orbit, protruding the Eyeball.*—Dr. JACOB communicated some interesting observations on this subject, to the Surgical Society of Ireland, at their meeting on the 19th of November last.

This distinguished ophthalmic surgeon observed, that, notwithstanding the great number and variety of tumours of the eye and orbit, there was an impression prevalent that all protrusions of the eye from this cause were produced by malignant or incurable disease. He admitted that the malignant or incurable diseases were of most frequent occurrence, but advised the surgeon to bear in mind the fact, that there are tumours of a different character which may be mistaken for them, and in consequence may be allowed to increase until they become dangerous from their size, and the pain they produce by stretching of nerves and other structures. It was not, he observed, to be wondered at that the contents of the orbit, including such variety of structures, a greater variety indeed than was to be found in any other part of the body within the same space, should afford so great a variety of morbid growths. There was exostosis and osteo-sarcoma, fungus hæmatodes and melanosis, glandular cancer of the lachrymal gland, and cutaneous cancer of the lids and conjunctiva, as well as that malignant and incurable ulcer which he had formerly described in the Hospital Reports. Besides, there were encysted tumours developed either in the cellular substance of the orbit, the ducts of the lachrymal gland, or the eyelids, and vascular growths, not malignant, of the conjunctiva and iris. His object at present was to direct attention to the encysted and other tumours of mild character, and with that view he described an example, now to be seen in the City of Dublin Hospital, in which the eye is completely protruded from the orbit, and pressed down on the cheek by a tumour, the size of an egg, growing from the upper part of the orbit. The subject of the disease, a young woman of about 25 years of age, perceived the tumour for the first time about six years ago, and applied for relief at Steevens' Hospital, where it was removed by Mr. Cusack, after which she remained free from disease for three years, when the part again began to enlarge, and was again removed, but not completely, in consequence of the depth to which it reached, and the impossibility of detaching it entirely, without removing the eye, to which she would not consent; since this period it has gradually increased to its present size. She was admitted into the City of

Dublin Hospital last month, and as she obstinately refused to allow it to be extirpated, a lancet was passed deeply into it, and about a teaspoonful of glairy straw-coloured fluid discharged, reducing the size, but not to any considerable extent. This not having been followed by any injurious effect, but on the contrary, having rather caused some diminution of the tumour, a bistoury was passed deeply through it, from one end to the other, some weeks afterwards, and the same kind of fluid was discharged, but still without emptying the tumour, which appears to be composed of separate cells. This was followed by a good deal of inflammation and distress which has now subsided, and the wound, which was made beneath the eyelid, having healed, the tumour remains nearly of the same size as before the operation. The girl being of irritable and nervous temperament, she suffers more than another might under similar circumstances. She keeps her hand constantly over the part to protect it from cold, which she says causes great pain, although she has been provided with cotton and fur to protect it. The pain, however, seems to arise from the stretching and distension, as well as the exposure of sensitive parts, rather than from the diseased structure. Dr. Jacob also exhibited a drawing of another tumour of the orbit in a man of about forty-five, which projected the eye toward the nose, growing, as it did, from the outer part of the orbit. This was about the size of a small egg, and caused much deformity and distress. It was laid open from one end to the other, and the entire contents, a straw-coloured serous fluid, discharged; after which it gradually contracted and healed, allowing the eye to return into the orbit. He also reminded the meeting that encysted tumours of the orbit, although rather rare, had been seen and treated by many surgeons, and had been particularly noticed by Schmidt, Beer, Langenbeck, Delpech, and Mr. Lawrence. The fact stated by the latter gentleman, that he found hydatids or acephalocysts (*echinococcus*) in an orbital tumour, and a similar statement by Langenbeck, as well as the curious case of a tumour of this kind containing a tooth, recorded by Mr. Barnes of Exeter, were, he considered, of great value, by proving that tumours of various kinds occur in the orbit neither malignant, nor necessarily connected, or originating from the lachrymal gland or its ducts, as some suppose.—*Dub. Med. Press*, Nov. 30, 1842.

72. *Vascular bleeding Tumour of the Cornea*.—Dr. JACOB laid before the Surgical Society of Ireland, Nov. 30th, 1842, an eye which he removed some months ago, on account of a large vascular bleeding tumour, the size of a walnut, which grew from the surface of the cornea and a small portion of the sclerotic, or rather from the conjunctiva covering them. It was of a deep blue colour, and not irregular or lobulated on the surface, as a tumour, apparently of the same nature removed by Mr. Travers from the same situation, was. On cutting into it, the structure appeared to be altogether vascular or cellular without tubercle or deposit, organised or unorganised. The eyeball was shrunk, and the sclerotic irregularly contracted; the choroid scarcely to be recognised, presenting a gray-blue flocculent mass, in the centre of which, instead of hyaloid membrane and vitreous humour, was a cell the size of a large pea filled with a kind of cellular substance of a yellow colour of exactly the same tint as the stain which rust of iron leaves on linen. The external growth did not communicate with or originate from this internal disorganisation. The optic nerve was not implicated in the disease: it was merely flaccid and destitute of medullary fibre, as in eyes destroyed by inflammation. The parts healed readily after the operation, and the disease has not returned.—*Ibid*.

73. *Remarkable appearance in an amaurotic Eye*.—Dr. JACOB called the attention of the Surgical Society of Ireland to an appearance which presented itself in the eye of a person upon whom he lately operated for cataract in the City of Dublin Hospital. The man, 33 years of age, was, he said, what is called amaurotic, or in other words, his vision was very defective even in the other eye which was free from cataract, and therefore he was unwilling to operate from a conviction that he had an unsound retina to deal with: but at the earnest solici-

tation of the patient, he consented to let him have the chance which the experiment afforded. The cataract was lenticular, and although more of an amber tint than is usual at this time of life, was otherwise not uncommon. The lens was freely broken up with the needle through the cornea, and was easily separated into pulp and fragments, some of which fell into the anterior chamber, and no inflammation requiring attention followed. In a month the greater part was absorbed, and in six weeks the whole, leaving a shred of opaque capsule attached to the margin of the pupil, but not large enough to interrupt the passage of light. As the cataract, however, disappeared, the iris became studded with delicate brilliant scales of metallic lustre, so numerous and large as to be easily visible with the naked eye, and still more conspicuous with the assistance of a lens. They were irregular in form, but with surfaces so plane and polished that they reflected the light freely, resembling, in a remarkable manner, the particles of mica in granite. The appearance continued until the man was discharged, having been visible for about a month, and may, probably, continue so for some time. Light, as had been predicted, was not restored, the retina being unsound. Dr. Jacob reminded the society that earthy, and perhaps crystalline deposits in the lens and its capsule were not very uncommon, and that they had been met of so dense a nature as to lead to the application of the term ossification to them, although not to be considered at all of the nature of real bone. They are probably phosphate of lime, or perhaps ammonio-phosphate of magnesia with phosphate of lime, but that he left to the chemists to determine. He said that on another occasion in breaking up a cataract of somewhat the same appearance, he was surprised to see a quantity of what appeared to be delicate needle-shaped crystals diffused among the fragments, but these disappeared with the cataract as it was dissolved. He also exhibited a drawing of a capsular cataract, the consequence of injury, which he had removed successfully, and which had presented on the surface an appearance of such metallic lustre that he was obliged to make the artist represent it with silver leaf, and added that these brilliant cataracts, in a less marked form were not very uncommon, but in all of them the disease was of long standing. Earthy deposits he observed were frequently found in the body of the lens in horses blind from cataract consequent on inflammation. The shell of bone sometimes found within the choroid of disorganised eyes, and generally called ossified retina, he observed was probably of the same nature as these lenticular deposits.—*Dublin Med. Press*, Jan. 25, 1843.

74. *Asthenic Amaurosis cured by the use of convex Spectacles.*—Taking a hint from certain quack vendors of spectacles, Dr. CUNIER, of Brussels, has made trial of the effects of convex glasses, in what he terms *cases of simple anæsthesia of the retina*, and with a considerable share of success. The influence of the light, directed upon the retina by such glasses, appears beneficially to excite the sunken sensibility of the optic nerve.

A lady, whose case he relates, could not for eight years without difficulty distinguish with her left eye the large characters forming the title of a newspaper; could not tell the hour on the clock, unless her eye was within two inches of the hands, nor distinguish the feature nor the figure of a person at the distance of two feet. If the right eye was covered, the left pupil became dilated, and remained so.

Glasses, whether concave or convex, ought always to be distinguished by their focal lengths, and not by numbers. As Dr. Cunier employs the latter mode, we are at a loss to know the precise power of No. 3, with which the patient could read a large type with her left eye, but probably it was a convex lens of three inches focus. After exercising the eye with this lens for some minutes, vision became confused and the head painful, so that the patient was obliged to desist. Next day she could with No. 3½, and on the third day with No. 4. The duration of this kind of exercise was gradually lengthened, and glasses of longer and longer focus employed. By the tenth day, the patient read the hour on the clock at the distance of 22 inches, and recognised individuals at double that distance. By the seventeenth day of the treatment, No. 24 was employed,

and the patient could read small type. After two months use of No. 24, the sight of the left eye was as good as that of the right.

Several other successful cases are related by Dr. Cunier.—*B. & F. Med. Rev.* from *Annales d'Oculistique*, May, 1842.

75. *Double Cataract, complicated in right eye apparently with Amaurosis—extraction of lenses—restoration of sight of right eye.*—Mr. WALKER, of Manchester, records in the *Provincial Medical Journal*, (Dec. 3, 1842,) a very interesting case of this character, illustrating the uncertainty of diagnosis and of the result of operations on the visual organ. The subject of the case was a female 74 years of age, who eight years previously had received a blow over her *right* eye, from which period she had been entirely blind in it; not being able to perceive a lighted candle, when held so close that she was sensible to the heat. This experiment Mr. W. made carefully and concluded that the eye was amaurotic. The pupil, however, contracted and dilated with the varying intensity of the light, but less actively than natural, or as compared with the other eye. It was also habitually more contracted than that of the other eye, and was not perfectly circular, being apparently slightly adherent at one point to the capsule of the lens, the capsule being opaque throughout. The vision of this *left* eye had been seriously impaired only during the last year. With this eye she could readily discern a light, as that of the candle or fire. She could perceive the motion of the hand when waved before the eye; and the pupil was very active. The opacity was of a grayish colour. The general appearance of both eyes was healthy.

Mr. Walker extracted the crystalline from both eyes, desiring to give her a chance of vision with both by incision of the upper half of the corneæ. The crystalline of *left* eye was of a decided amber colour and very firm. Very little vitreous humour escaped with the lens, but there was a rather free discharge of it afterwards.

The lens of the right eye was of a deep amber colour, rather less than that of the other, and a quantity of pultaceous matter was discharged with it, probably the outer portion of the lens partially dissolved. The opaque capsule was also discharged, no vitreous humour escaped after the operation.

Inflammation succeeded the operation in the *left* eye, which continued for several weeks, and terminated in extensive opacity of the cornea and partial atrophy of the globe.

The *right* eye progressively improved, and with the aid of the usual convex glasses the patient became able to read with great fluency.

76. *Injury of right eye—sympathetic Ophthalmia of the left—complete loss of vision—restoration by operative means.*—Mary Brown, ætat. 6, in Feb. 1839, received a severe lacerated wound of the right eye from a piece of slate, which had been thrown with considerable force from a short distance. She was brought to the Manchester Eye Hospital in a day or two after the receipt of the injury, when, on examination, a wound was discovered extending across the centre of the cornea and part of the sclerotica at the external canthus. The pupil was obscured by an effusion of blood into the anterior chamber. She complained of much pain in the eye, and vision was entirely lost. The eyelids were approximated and kept together with strips of adhesive plaster, and the usual precautionary treatment was advised. The wound healed and the eye had got into a tolerably quiet state at the end of about six weeks, but vision was destroyed and the organ rendered atrophic.

It was not until six months had elapsed that the patient began to complain of the *left* eye. Symptoms of inflammatory action were then developed: these, however, were never of an intense character, but the pink zone, the discoloration of the iris, the fixed and contracted state of the pupil, and the gradually extending opacity of the capsule of the lens, ultimately terminated in an almost total loss of vision, notwithstanding the prompt employment of the usual remedies, especially leeches, mercurials, belladonna, and counter-irritation. She had occasional relapses of inflammatory action, so that it was not until the spring of

the year 1841, and two years from the receipt of the injury, that it seemed proper to propose an operation.

July 17, 1841. At this period she had been free from inflammatory attacks for several months. The sclerotica and cornea had both a healthy aspect, and the anterior chamber was of undiminished size, but the condition of the iris, and that of the pupil and capsule of the lens, remained as before described. She had a very small amount of vision, being only able to discern a lighted candle or some luminous or brilliantly coloured object. As there appeared reason to hope that the retina retained a certain degree of sensibility, it was deemed advisable to give her the chances of an operation.

A puncture was accordingly made by Mr. Walker at the inferior margin of the cornea with an extraction knife, the point of the instrument being carried into the pupil so as to perforate the capsule and facilitate the exit of the crystalline lens. The scoop was next introduced through the wound into the pupil, and the opaque body, which was simply the thickened capsule (the lens having been evidently previously absorbed), was readily removed. The eyelids were then closed, and kept in apposition by means of the plaster dressings. A slight attack of inflammation succeeded, and was several weeks before it entirely subsided, when the pupil, which was drawn somewhat down towards the wounded part of the cornea, was found closed by either a portion of capsule which remained, or, more probably, by an adventitious membrane, the product of the inflammatory action. No improvement to vision had hitherto resulted.

Nov. 6. All irritation from the previous operation having long since subsided, it was agreed to proceed to the formation of an artificial pupil. The alarm and unsteadiness of the girl seemed to forbid the attempt at removing a portion of iris by excision. Accordingly, the iris knife was passed through the sclerotica, and, having perforated the iris, appeared in the anterior chamber; the instrument was then made to cut through the opaque membrane and adjoining portion of the iris, leaving a tolerably clear, though somewhat irregular pupil. The eye was then dressed in the usual manner.

9. The dressings having been removed, the lower portion of the eyeball, near the site of the puncture, was observed to be very vascular; the opaque membrane was no longer visible; the pupil appeared of moderate size, of an oval shape, and situated near the centre of the iris, but was evidently occupied by some effused matter. She had a very strong sense of light, and could observe the black marks on some writing paper held before her. There had been no pain in the eye since the first day after the operation. The dressings were reapplied, and a purgative ordered to be taken occasionally.

13. Had gone on favourably since last report; there was less vascularity, and no uneasiness about the eye; the pupil looked somewhat clearer, but was still occupied by effused matter, which had probably become organised; vision had not improved; the same treatment was continued.

After this time the inflammatory action soon subsided, and it became evident that some further operative proceedings would be required before any useful vision could be expected. It was thought advisable, however, to give time to enable the eye to recover itself, and accordingly another operation was deferred until the following spring.

April 9, 1842. There had been no undue amount of vascularity about the eye for some time past. The general appearance of the organ continued favourable, there being no opacity of the cornea, except at its lower margin, the site of the former incision; the sclerotica still maintained a healthy aspect, and the iris had not undergone any material change, the pupil being still obliterated or occupied by some effused and organised matter.

This day the cornea was punctured at the lower margin with an extraction knife, and a small iris hook introduced through the wound into the centre of the iris and former situation of the pupil. A portion of iris was then endeavoured to be drawn out by means of the hook, but its texture, or perhaps rather that of the organised deposit, was so fragile, that it tore through, leaving, however, an aperture of ample size and nearly in the usual situation of the pupil. She was

able immediately to discern the persons of those around. The eyelids were then secured with strips of plaster in the usual manner.

12. On the removal of the dressings but little increased vascularity was observable; the incision had apparently healed; the pupil remained open, of an oval form, and of about the medium size. She could readily discern objects around. The dressings were renewed, and the usual treatment recommended.

16. Proceeding very favourably. She had suffered no pain in the eye, and the vascularity was trifling. The pupil continued open and of undiminished size, a small portion of opaque matter occupied its lower margin. Vision remained fully as good as before.

May 7. The eye had now completely recovered from the operation. The pupil remained open, of good size, and situated nearly in the centre of the iris. She was supplied with a powerful convex lens, which increased her powers of vision very materially, and was discharged well satisfied with the result and in excellent spirits.

Instances of restoration of vision, after an attack of sympathetic ophthalmia, are extremely rare. Hence this case possesses an unusual degree of interest. Dr. Mackenzie states that he has never met with an instance in which vision was regained. If this be the rule, the present case forms an exception. Perhaps the most important peculiarity is the length of time which elapsed between the receipt of the injury and the development of the sympathetic ophthalmia. Possibly this may account for the milder character of the attack; usually a much shorter interval is found to succeed.—*Prov. Med. Journ.*, May 28, 1842.

77. *Improved method of extirpating the Eye.*—The attention lately paid to the orbital capsule of Tenon, has led Dr. BONNET, of Lyons, to an improved method of extirpating the eye, in those cases in which nothing but the eyeball requires to be removed. In the ordinary mode of operating, the instrument is buried in the fat of the orbit, and the muscles are divided at a considerable distance from their insertion into the eyeball; the trunks of the nerves are cut across, as well as considerable branches of the ophthalmic artery. All this is avoided, if the muscles and the optic nerve are divided at their insertion into the sclerotica, and the eyeball removed, leaving Tenon's capsule entire. In this mode of operating, all risk of hemorrhage is avoided, the optic nerve only is divided, and the wound is separated from the remaining contents of the orbit by the capsule. Separating the eyelids, Dr. Bonnet proposes to divide the rectus internus, as in the operation for strabismus; next, sliding the scissors through the wound, they are to pass between the sclerotica on the one side, and the subconjunctival fascia and muscles on the other, and to divide the remaining three recti close to their insertions; the two obliqui are to be divided as near as possible to the eye; then, the optic nerve. The eye is now removed, without implicating any vessel, or any other nerve than the optic, and without penetrating into the fat of the orbit.

The cases suitable for this mode of operating must be few, the textures surrounding the eyeball being in general too much implicated in the disease to be left behind. Gensoul had a case, in which Bonnet's plan might have sufficed. The eye was changed neither in form nor size; vision was destroyed; but the excruciating pain suffered by the patient, and which no means were found to mitigate, was the only circumstance which determined the question as to an operation. A melanotic tumour, confined to the retina, was found to be the disease.

Dr. Stœber, of Strasburg, has removed an eye affected with melanosis, nearly on Bonnet's plan. Having cut the rectus internus, he drew the eye forwards, divided the optic nerve with curved scissors, and finished the operation by separating from the eye the conjunctiva and the muscles. The eye, thus removed, looked as if nicely dissected, the sclerotica being perfectly free of cellular substance. The operation required much less time than the ordinary extirpation, and very little blood was lost. Dr. Cunier has removed an eye according to the same method. The eyeball was not changed in form; the disease was medullary fungus. The suppuration was very great, and the granulations

excessive. Experience must determine, whether these effects are generally to be expected when this mode of operating is adopted.—*Brit. and For. Med. Rev.*, Jan. 1843, from *Annales d'Oculistique*, April, 1842.

78. *Foreign substance in the Eye*.—An interesting case of a singular character has occurred in the practice of M. de CASTELNAU, who has published the details in the *Archives Générales de Médecine* for October last. The foreman of the iron works at the Versailles railway, a man about thirty years of age, was wounded in the right eye on the 29th of June, 1838, by a piece of steel on which the men were at work, and which had been struck off by a heavy hammer. All the symptoms of a foreign body in the eye were immediately manifested, accompanied by severe pain and instantaneous loss of vision. M. Sichel, whom he consulted, found a perforation of the cornea, but could not discover the piece of steel; he concluded therefore that it had been removed, and directed all his attention to the prevention of inflammatory symptoms, at the same time warning his patient, that he must not hope for the restoration of vision. The treatment pursued was sufficiently energetic, but the pain continued very severe, accompanied by an effusion of the aqueous humour, which excoriated the cheek. The wound of the cornea not having been cicatrised at the end of a month, the patient consulted M. Carron du Villards, under whose care it healed in a few days. All the severe symptoms were then gradually relieved, and the man could resume his avocations, but the vision of the injured eye which at first enabled him to distinguish light from darkness, gradually diminished, and was finally quite lost about eighteen months after the accident.

Three years and a half had elapsed when he was seen by M. de Castelnau; he was then suffering from pains in the eye, which were at first dull and slight, but gradually became so severe as at times to prevent his sleeping; the conjunctiva was rather red, and the centre of the cornea presented a peculiar conoid appearance, which at once attracted de Castelnau's attention, and induced him to ask whether the eye had been struck by a foreign body. He then learned the preceding facts, and was informed that from the appearance of the block of steel whence had been chipped the piece, it must have been of comparatively large size, unless it had been broken into small pieces. The cornea was quite opaque, and the eye shrunk, as if it had lost some of its contents.

A few days afterwards, the pain and inflammation having much increased, a little solid angle was seen projecting at the top of the cone of the cornea, which, by its hardness, was ascertained to be metallic. This was removed a few days afterwards, the operator finding his chief difficulty from the adhesions formed by the posterior part of the steel with the interior organization of the eye. The operation lasted six or seven minutes, and was not very painful. There was not any attack of fever, nor increase of pain afterwards; but, on the contrary, all the symptoms diminished in intensity, and soon after the man returned to his workshop.

The foreign body was a fragment of iron, having the shape of a regular triangular prism, two faces of which, being nearly equal, formed a right angle, and all its angles were exceedingly sharp; it weighed fifteen grains, and was six lines and a half long.—*Prov. Med. Journ.*, Dec. 17, 1842.

MIDWIFERY.

79. *Apparent death of the fœtus in utero*.—The following very interesting case of this is recorded by SAMUEL HARE, Esq. in the *Prov. Med. Journ.* March 5, 1842.

“S. Sharp, aged 21, a fair and healthy looking woman, gave me the following account of her first pregnancy:—She quickened last May, through being frightened at a thunder storm; was very sick at this time, and felt her child distinctly move. She suffered a good deal with bearing-down pain in her back, and all around her stomach, together with a leucorrhœal discharge; no œdema, or vari-

cose state of the legs, but a numbness in her left thigh; bowels very irregular, either costive or relaxed, generally the latter; no morning sickness, but difficulty for the last six weeks in passing her water, which was more like coffee grounds for the first three months; areola very dark, but no distinct follicles; always very drowsy in the day, and troubled a good deal with heartburn. About the seventh month the catamenia appeared for two days, and she then complained of much forcing down pain, so that her mother fancied she was really in labour; they again appeared in three weeks time, and in a week after came like a gush of blood, ruby red in colour, and with the feeling as though she was in labour; a medical man was sent for, who could not then state whether the child was dead or alive. At that time she was very large, but thinks she has decreased to nearly half her former size; and there has been an excessively fetid and slimy discharge, per vaginam, of a thick green and yellow colour, for the last month. She felt as though the child was dead about five weeks ago, for it rolled about the abdomen just like a lump of lead (to use her own phrase), and when she turned in bed, rose from her chair, or in any way altered her position, this weight was felt tumbling down to that side which was lowest. She was frequently seized with sudden shiverings, languor, and debility; lost her appetite and spirits; breath fetid; face pale, sallow, and of a dark leaden colour under the eyes.

"The abdomen underwent no further increase of size, but greatly diminished; the uterus flaccid and movable; and a sensation of coldness and weight in the abdomen; her breasts were flabby; and there was great numbness down her left thigh. She noticed something come away in her water like pieces of flesh, but; unfortunately, her mother threw them away. On the 15th October I was unexpectedly summoned to attend her, and delivered her of a fine, strong, healthy child, alive; but no baby-linen had been provided, as four practitioners had pronounced, from the above symptoms (but mark! without ever once having applied the stethoscope), that there was not the slightest doubt in their minds but that her child had been dead for some time. The labour was quite natural, although very tedious. I was, however, convinced that the child was alive, for a firm, elastic swelling rose on that portion of the head which first entered the vagina, which is produced by the circulation in the presenting part of the scalp being obstructed by the pressure which the os uteri et vagina exerted upon it; an effect which can only be produced upon the head of a living child; for if the fœtus is dead, the scalp will be felt to be soft, flabby, and without swelling. Judge, then, of my astonishment, for I had expected to encounter desquamation of the cuticle, emphysema of the scalp, looseness of the bones, and breaking up of the texture of the cranium, together with a total loss of pulsation in the funls."

80. *Twins—interval of two months between their births.*—In our preceding No. there is an account of a case of twins, in which seven weeks elapsed between the births of the children. The following case of a similar character is recorded in a recent No. of the *Lancet*, (Jan. 14th, 1843,) by Mr. J. T. VALE, of Birkenhead, Cheshire, which he states occurred in the practice of a veteran accoucheur in his neighbourhood.

"Martha Lowe, in her fifth pregnancy, was taken in labour at the seventh month of utero-gestation. A midwife was in attendance, when, at the expiration of a few hours, a little girl was born. The after pains were unusually troublesome and severe for a short time, when Mr. B.'s aid was requested in order to prescribe for the pains. She stated at the time that there was positively another child in her womb, and that she should then retain Mr. B. to perform, at the end of *two months*, the duties of accoucheur at the birth of the next child. At this rather novel engagement Mr. B. smiled (not dreaming that she was in earnest); and promised to send her an anodyne, which abated all the pains, and in a short time she was well, and busily engaged about her domestic affairs, and so continued until exactly the day two months from the first time that Mr. B. was called in, when, in his presence, another living child, full grown, of the same

sex, was speedily ushered into the world. In the interim of the two births, at the month's end, as is usual, the patient was churched, for safely passing through her first accouchment. The eldest child lived but a few months; the last born is still living, and six months ago resided with her mother, a fine young woman, nearly twenty years of age."

81. *Death by Hemorrhage from a varix of the left labium*, by Dr. HESSE.—A married woman, nearly at the close of her fifteenth pregnancy, after having gone through her domestic duties in the morning, had laid herself down to sleep after dinner, (which she had eaten with appetite,) when she was suddenly seized with a profuse bleeding from the pudenda. The midwife was sent for forthwith; but she seeing the urgency of the case, called in Dr. Hesse, who only arrived, however, as the poor woman was on the point of expiring. The bed and bedding were soaked with blood; on examining the parts, the os uteri was found closed, and the vagina dry. At this moment the patient expired. The Cæsarian section was immediately performed; but the child was dead. The uterus appeared exsanguine. In the labium pudendi, which was large and flabby, there was an opening of about half an inch in length from which black and tar-like blood was readily expressed. The opening led to numerous venous canals, both laterally and inwards, deep into the perinæum. The husband informed Dr. Hesse, that his wife had long laboured under a great enlargement or swelling of the labium. This swelling appeared to be neither more nor less than an enormous varix.—*Lond. and Edin. Mon. Journ. Med. Sci.*, Feb. 1843, from *Medicin' Zeit. vom Preuss. Verein*, Nov. 30, 1842.

82. *Death from bursting of a varix in the thigh of a pregnant woman*.—An example of this kind is recorded by Dr. KILLER in the *Medicin. Zeit. vom Preuss. Verein*, Nov. 30, 1842.

83. *Cæsarian Section successfully performed*, by Dr. MERREM.—A woman, 30 years of age, had already been three times delivered by means of the prefator and crotchet. Pregnant for the fourth time, and having suffered extremely from the 12th to the 15th of August, without a prospect of the head passing the pelvis, the patient consented to the Cæsarian operation, which had been proposed to her early in course of the 14th. The operation was done in the usual way, in the linea alba, and the only difficulty experienced was in disengaging the head from the isthmus of the pelvis, into which it was firmly wedged. The child, when sprinkled with cold water, began immediately to cry, and moved freely; the mother declared the pain of the operation nothing, when compared with the suffering she had already endured; it was begun and completed in a quarter of an hour. 16th. Belly distended with flatus; some pain; no fever. A suppository was followed by the discharge of much flatus, and complete relief to the pain. A little soothing electuary was all the medicine that was prescribed or required. The mother nursed her child, and in four weeks was going about her ordinary household affairs.—*Lond. and Edin. Monthly Journ. Med. Sci.*, Feb. 1843, from *Med. Zeit. vom Preuss. Verein*, Nov. 1842.

84. *Diagnosis of some obscure affections of the Uterus*.—M. PEREYRA reports in the *Journ. de Med. de Bordeaux*, the case of a woman fifty years of age, who, after having for a considerable time been afflicted with all the symptoms of uterine cancer, suddenly felt pass through and out of the vagina a bulky tumour, which it was found impossible to reduce. The tumour was of a yielding consistence, and moistened with a sanguinolent fluid; it was not painful on pressure. The finger introduced into the vagina was soon arrested by a *cul de sac*, and several surgeons, who were now called into consultation, considered the case one of retroversion of the uterus. While, however, they were deliberating about the remedial means to be employed, the tumour sphacelated, and the patient died. At the autopsy the uterus was found occupying its natural situation, though its neck was elongated, and a tumour of a cancero-fungoid nature grew from the inferior extremity of the os tinæ. This growth was probably expelled

beyond the vulva when, by its augmenting size, it had dilated the vagina to the utmost practicable extent. The "*Gazette Medicale*," Nov. 26, which quotes the above case, remarks, that the difficulty of distinguishing diseased growths from retroversion of the uterus is greater than might at first be supposed, and that the only way of attaining a correct diagnosis is to ascertain if the uterus be or not in its normal situation. Two methods are proposed for this end; either the forefinger is introduced into the rectum, or a male catheter into the bladder, by the extremity of which instrument an exploratory process is conducted. The latter mode, treated of by Malgaigne (*Thèse de Concours*, 1833), requires, of course, some tact, but to the experienced surgeon it will give the more certain indication. In the case cited, indeed, a precise diagnosis was not absolutely necessary; for, whether fungus or retroverted uterus, as the tumour was manifestly carcinomatous, its peduncle should have been tied, or its excision immediately effected.—*Lancet*, Jan. 14, 1843.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

85. *Death after a blow—Bursting of an Aneurism.*—The following case is stated in the *Prov. Med. and Surg. Journ.*

On the 8th of Feb. 1842, Mr. James Goss, second master of the British ship *Impregnable*, then lying in the harbour of Malta, struck a man named Edward Purvis in the face. Purvis stooped down, picked up his cap, appeared violently excited by the blow, shouted passionately that he would go and report Goss to the captain, ran up the main ladder, and then again on to the upper deck; but instead of proceeding to the captain he suddenly rushed to a water bucket, and began to drink, and immediately after to eject an immense quantity of blood from the mouth. In five minutes more he was dead, probably seven minutes from the time the blow was inflicted.

The body was examined on the same day. There was no external mark of injury whatever on the body; there was a considerable quantity of frothy mucus tinged with blood, exuding from the mouth and nostrils; and the external veins of the body were unusually turgid. The left lung was greatly engorged with blood, and on removing it from the body, the whole of its substance, together with the air passages, were found filled with blood. There were strong adhesions of the right lung to the side of the chest, with extravasation of blood, but not to the same extent as in the left lung. There was an *aneurism of the arch of the aorta* where it crosses the windpipe, about the size of a large walnut, and the aneurism had burst into the windpipe. Absorption of the anterior portions of the bodies of the fourth and fifth vertebræ had taken place, and which had evidently been caused by the pressure of the aneurism. The heart was of the usual size and apparently healthy. The stomach was healthy, but contained a large quantity of blood mixed with its contents. The other abdominal viscera were sound, nor was there any disease to be discovered in the brain or its appendages.

On the 17th Goss was tried by a court martial. Dr. McArthur testified that "from the appearance of the aneurismal sac, it must have been on the point of bursting for some time previous to the deceased's death." Dr. Leyson deposed that "the deceased could not, under any circumstances of the disease, have lived any length of time," and he said he thought the bursting of the blood-vessel had no connection with the blow on the cheek." Dr. Martin also stated that "the blow on the cheek could not have produced the bursting of the aneurism."

Under these circumstances Goss was acquitted of manslaughter, but dismissed the service for having struck the blow. The editors in commenting on the case remark, that "Gordon, Smith, Mott and Dupuy, give cases, in which, under violent fits of anger, a large abscess of the liver had burst into the peritoneum: an abscess in the parietes of the heart had burst, causing rupture of the left ventricle; and a rupture of the duodenum was found without marks of external injury.

But in none of these cases had there been any blow." There is, however, quite a parallel case related by Chaussier, (*Recueil de Memoires, &c. &c.*, Médecine Légale, p. 11.) Two men who had long been at enmity, met in a public and much frequented place. One, who had just alighted from on horseback, with a riding whip in his hand, used some insulting language to the other, and passing along struck him over the shoulders with the whip. The person struck, furious from this unexpected attack, ran, violently vociferating after his adversary, but had not proceeded more than twelve paces, before he fell down dead. The assault had been witnessed by a crowd of people, and of course the fatal result was ascribed to the blow. But there were no external marks of injury, and on dissection, the thorax was found filled with blood, from the rupture of an aneurism, under which he had long laboured, and for which he had repeatedly taken medical advice.

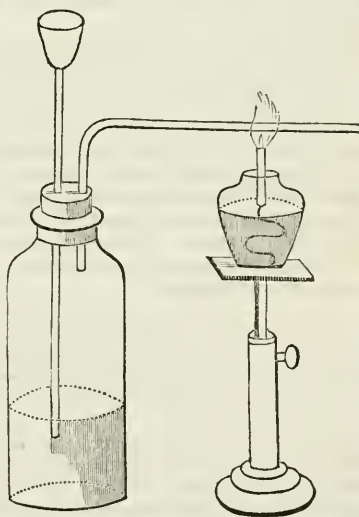
It is matter of regret that the medical witnesses should venture so ridiculous an opinion that the *blow* had nothing to do with the sudden death. The blow and the passion consequent on it, stand in the relation of cause and effect, and so far the person assaulting is guilty—not of murder, but possibly of manslaughter, if he be aware of the nature and consequences of aneurism. If, on the contrary, he is ignorant of the presence of this malady, he could scarcely be deemed guilty of an aggravated offence.

T. R. B.

86. *Detection of Arsenic, &c., in Organic Mixtures.*—Instead of using Marsh's apparatus, a bottle similar to that represented in the annexed figure may be employed. The gas may thus be passed through a hard glass tube, and a portion of it heated red hot by a spirit lamp. The arsenic is thus reduced and condensed, without loss, near the flame. It affords, moreover, the means of distinguishing between arsenic and antimony, these metals being easily confounded by the test of burning the gas at the jet. When antimonietted hydrogen is passed through a red hot tube, the reduced antimony is deposited much nearer the part where heat is applied than arsenic is, and unlike the latter metal, on both sides of the heated part.

When the ordinary apparatus with the jet is employed, a good method of discriminating between antimony and arsenic, is by collecting and examining the white sublimate formed by the combustion of the gas. For this purpose the sublimate is most conveniently collected by condensing it within a glass tube open at both ends, held slightly oblique. The tube may be about six inches in length, and half an inch in diameter. When the sublimate produced by the combustion of twice the contents of a bulb has been obtained, it may be treated with a little water, to which a single drop of solution of ammonia has been added, when it dissolves, if it is arsenious acid, giving a solution in which arsenic is easily recognised by the two principal fluid tests for arsenious acid, viz. ammonio-nitrate of silver and ammonio-sulphate of copper. If the metal be antimony, the indications that these reagents give with arsenious acid will not be perceived.

A sublimate of metallic arsenic may also be distinguished and even separated from metallic antimony, by a solution of the chloride of soda, or of chloride of lime, which dissolves the arsenic, but leaves the antimony untouched. (Bischoff.)



In the reduction of sulphuret of arsenic to the metallic state, the following operations are necessary.

1. *Preparation of the fluid.* Boil the suspected matters with water and a few drops of nitric acid. Strain through calico. Precipitate animal matter by an excess of nitrate of silver and subsequent addition of common salt. Filter through paper. 2. *Precipitation of the sulphuret of arsenic.* Transmit a stream of sulphuretted hydrogen through the liquid for half an hour. Heat the liquid in an open vessel for a few minutes, to cause the precipitate to separate. Wash the precipitate by affusion of water acidulated with hydrochloric acid and subsidence. Dry the precipitate at a temperature not exceeding 300° . 3. *Reduction.* Mix the dried precipitate intimately with twice its weight of dry black flux, and heat to redness in a glass tube. Heat slowly a particle of the metallic crust thus obtained in a glass tube, and observe the formation of a white crystalline sublimate of arsenious acid. (Graham.)

A solution of *arsenic acid* is precipitated by sulphuretted hydrogen with less facility than a solution of arsenious acid; a trace of arsenic acid may even effectually resist decomposition by sulphuretted hydrogen. When the arsenic, therefore, can be contained in a suspected liquid in the state of arsenic acid, it should be reduced to the state of arsenious acid before transmitting sulphuretted hydrogen. This may be readily effected by sulphurous acid at a boiling heat. (Wöhler.) An aqueous solution of sulphurous acid is mixed with the suspected liquid, and the mixture boiled; by this, the arsenic acid is reduced, while the excess of sulphurous acid is expelled in the ebullition. Sulphuretted hydrogen may then be passed through the solution, and the precipitated sulphuret treated in the usual manner.

Lead. Add a little nitric acid to the suspected mixture before filtration, to dissolve the compound of oxide of lead and organic matters, and transmit sulphuretted hydrogen gas through the filtered liquid. Boil and collect the precipitate on a filter. To prove the existence of lead in the precipitate, digest it in moderately strong nitric acid, with the assistance of a very gentle heat, by which the lead will be dissolved, whilst almost all the sulphur remains unacted on. If strong nitric acid is employed, the sulphur will be converted into sulphuric acid, and the insoluble sulphate of lead formed. The acid solution of nitrate of lead must be poured off from the sulphur, evaporated to dryness and redissolved in water. This solution can then be examined by chromate of potash, or any other test of lead.—*From Parnell's Elements of Chemical Analysis, Inorganic and Organic.* T. R. B.

87. *Non-conversion of Calomel into Corrosive Sublimate by the alkaline chlorides.*—In opposition to the experiments of Mialhe, published in our last number, (p. 233,) is a note by LEPAGE in the *Journal de Chimie Medicale*, for Sept. 1842.

LePAGE and D'OLLEGIO, an Italian chemist, have each ascertained by experiments made separately:

1. That calomel, when perfectly free from sublimate, digested with its own weight of hydrochlorate of ammonia, or any other alkaline chloride, in distilled water, at a temperature of from 100° to 104° of Fahrenheit, during 24, 36, or even 48 hours, underwent no change of colour. The filtered liquor did not by means of any reagent, appear to contain a trace of a mercurial salt. Some pigeons which were made to drink of this same liquor for several successive days, suffered no inconvenience, and the calomel lost no sensible weight.

2. The same mixture exposed to a temperature of 122° to 140° Fahr., yielded a liquor which acted precisely in the same way with reagents, and on the animal economy as the foregoing.

3. By continued boiling, however, and under the influence of a great excess of chloride, the conversion took place, but only partially.—*Lond. and Dub. Phil. Mag.*, Nov. 1842. T. R. B.

88. *Presumption of Survivorship.*—(Continued from page 240.) *Thirdly.* When many persons perish at the same time by drowning.

The following circumstances are to be taken notice of in cases of this kind:

1. Persons, who are able to hold their breath a long time, will die later than those who cannot. Col. Townshend placed himself in the presence of many physicians in a state resembling death. He laid himself upon his back, one physician felt his pulse, another beating of the heart, the third held a mirror before his mouth. Pulsation and beating of the heart ceased instantly, the mirror remained clear, this state continued for half an hour, when the beating of the heart and respiration returned. (*Henke's Zeitschrift*, 4 Jahrgang.)

2. Persons who fall head foremost into the water, will die earlier than those who fall in another manner.

3. Persons who remain longer upon the surface of the water, or several times rise up again, will die later than those who sink immediately to the bottom.

Dissection of such drowned persons affords the principal grounds of decision, whether they have lost their lives by apoplexy or suffocation.

Apoplexy causes death sooner than suffocation. But should many persons have died of apoplexy or suffocation, we may certainly assume, that the persons with whom a tendency to apoplexy prevailed, have died sooner than those where this was not the case. With persons inclined to apoplexy, death on falling into the water, particularly if they are heated, occurs instantly." (*Henke's Lehrbuch*, § 473.)

But where many persons have died at the same time of suffocation, we may assume, that the persons on whom the signs of suffocation are the most distinct and marked, have died last.

A body, on which the signs of suffocation and apoplexy are found at the same time, has died earlier than one on which we find merely the signs of suffocation.

A lady of noble birth, E. M. v. L. was passing with her three daughters, of 14, 16, and 18 years of age, and her cook in a two horse-coach through the ford at Pradel, which was very much swollen: the king-bolt of the carriage came out and the horses drove on with the fore part of the carriage. The back part sank down, and was carried somewhat forward by the water, whereupon the coachman springs from his seat, in order to assist the persons sitting in the carriage, but which was impossible, as the water in the stream carried the carriage across and overturned it, which he did not let go of, and thought to keep hold of, which however was impossible, because he, at the time when the carriage was turned over, was turned over with it. When the carriage had been turned round some three times, they were all still alive; but when the carriage rose up the fourth time, the three young ladies were already dead, the lady and the cook were still alive, while the first three were fallen down, and did not move, and had also partly fallen out backwards: the cook had still cried out, and the lady said to him, Oh! coachman save yourself only; as he had then at three different times been drawn by the current under the water. When the water had again turned over the carriage, the lady yet cried out and prayed; but after that the coachman had seen no one again, and was himself forced on by the current, until he came to a tree, which he seized.

When now the maternal relations claimed the whole inheritance, to the exclusion of the paternal relations, the latter sought to invalidate the testimony of the coachman, and based themselves upon the presumption of law, that the children might have lived longer than the mother, and if not all, yet at least one had survived the mother. Upon this very doubtful case the following questions were propounded.

a. Whether from all the occurring circumstances, that, what the coachman has testified of the first ensuing death of the three daughters, deserved credit, and that therefore it was to be held probable that the mother survived the daughters.

This question was thus answered: although *ex actis* it does not appear, who had drawn the drowned bodies from the water, how soon it was done, whether any one was near by, and had traced motion, respiration, warmth, or any signs of life, on any of the bodies; also that the fishermen, who were in the neighbourhood, or any others had been examined; further, the coachman has not ex-

plained what he meant by springing from the seat, how, and where he had stood, that he possibly would have held on the wagon, and had perceived what had taken place therein, as he has related it: besides we do not find how old the drowned lady Von L. was, hence we had to investigate the point. But since the answer to the proposed question, first concerns that, what the coachman could perhaps immediately perceive, and judge of according to the circumstances and also to the appearances, but especially to the others, how such things might deceive, and he not be able to know the real death of the three ladies; yet from the legal documents we may believe, that the bodies were drawn out from the water as soon as possible, that no sign of it was observed in either, while an evidence of that kind might have decided the whole question, and it is well remarked, that the coachman, at the time he observed what was taking place with and in the coach, had his head above the water, also from the age of the young ladies, the age of the mother was about 40, more or less.

Hence in reference to the first point of the answer: it is so, that in the anguish and danger of death, wherein the coachman found himself, he could with difficulty observe the course of things, and it is not indeed possible, that he from the falling down, and want of motion, at such a moment could correctly decide, whether the ladies, especially three of them, together with the mother and the cook who were in the coach, were really dead, still from the testimony of the coachman, that the lady had spoken the last, and on the fourth turning of the carriage the daughter had fallen down, and did not move; we hold it probable, that in so far as it can appear from the coachman, it must be, that the three ladies had died before the mother.

But this account of the evidences of death, uncertain and founded only on conjecture, was still further opposed by another question, in which the reasons *pro* and *con* were decisive.

6. Whether, and how far, despite the testimony of the coachman, still the ladies may have lived, when he believed that they were already dead?

a. When then on the side of the maternal relatives in the present case, it was maintained (a) that the mother, of a grave disposition, on account of her age, and ever had been so, consequently at the time was well, hence in so sudden a necessity, had more determination and energy than the three young ladies, and could help herself for a longer time, as also the testimony of the coachman conforms hereto, and strengthens it the more, (b) also that we do not find, as with the bodies drawn out from the water any signs of life remaining was discovered, (c) as also such extraction or drawing forth of bodies of any kind, would have occasioned irritation and motion, if, indeed, with one or the other, any had been left: (d) in addition, the delicate young ladies by excitement would have been brought rather to cramps in the breast and convulsions, and hence death would be hastened, so that the mother survived them, (e) consequently the lying down and want of motion in the young ladies, which the coachman testified to as the signs of death, are also on this account the more sufficient to prove their death, and hence to confirm the testimony of the coachman and the perfect death of the daughters before the mother, therefore the maternal relatives are entitled to maintain the inheritance of the daughters descended to the mother who died last, to the exclusion of the relatives of the father.

b. On the other hand the relatives of the father contended that (a) the vital power at the age of the three ladies was generally able longer to withstand death, than at the age of the mother, as the latter had been affected with hemorrhage and other ailments, and (b) that after the bodies were drawn out, no bleeding, warming or rubbing &c. was made use of, as these attempts might be useful to restore life or as a possible proof of the death, as (c) the motion of the bodies at the time of the drawing them out from the water and the coach, is in no manner to be compared with the carrying of them, and (d) farther syncope and cramps in the breast in which the three ladies had earlier fallen, so much the less proves death, as it is well known, that, particularly with females, in the like cases, besides that they grow faint and numb, frequently the pulse cannot be felt in the external arteries, as also respiration without a movement of the breast, and only by a

slight motion of the diaphragm be discovered, and yet such persons recover, hence (e) we particularly cannot know, whether and how long the young still had life, they might have swam away, and the stream have carried them on more alive than absolutely dead: besides also the lying down and immovableness of the three ladies, which the coachman testifies to, still less, than the outcry of the mother, as they were found in the water, can prove the absolute death of all these persons; the rather (f) that these and many more signs may deceive, although (g) people, who have been a considerable time under the water, indeed often recover, if application is made use of; as the young ladies were three in number, and on the 3d of September, the water was not so very cold, it is the more evident, that when they were brought to the bank, if not all three, together with the mother, yet one had a spark of life and might have been saved. For these and other reasons, together with the presumption of law, we consider that the testimony of the coachman deserves no credit.

Fourthly. When many persons are precipitated into an abyss and dashed to pieces.

In this case we must particularly examine, on whom wounds of the nobler organs are found. Thus, for example, those will die earlier whose skull is fractured, than those who have suffered the fracture of an arm or leg. Those also will have died the earliest, on whose corpses we find the internal vessels lacerated, than those who have received a flesh (bleeding) wound on the extremities. But where many persons in the same manner, and by the same injury are killed, he will have died the earliest on whom the injury first happened, or also that one on whom the severest lacerations are found. But where the wound is equally great on many persons, or has happened to all on one and the same organ, then the stronger will have survived the weaker. The idiosyncrasy of the person may, however, in the last case, afford a ground of distinction, as when, for example, death is caused by extravasation of blood in the skull, a full-blooded person or one who has a tendency to apoplexia sanguinea, will die sooner than those with whom this is not the case.

Fifthly. When many persons perish at the same time in a conflagration.

In such a case we must first ascertain, whether the persons are really burnt, or suffocated by smoke, or entombed and crushed by the falling buildings.

The distinctive signs of persons dead from suffocation and wounds have already been mentioned.

In respect to death by burning we must decide, whether the man was really burned alive, or whether we find signs upon the dead body, that the marks of burning have been occasioned after death, resulting from some other cause. On this point we have a very interesting essay by Christison.

A case of many persons destroyed by fire, which on account of the claims set up to the inheritance occasioned judicial proceedings, is to be found in Kopp's *Jahrbuch der Staatsarzneikunde*, 71, 8, p. 181. At Ormay, in the district of Murten in the Canton of Fryburgh, a fire in the night of the 16th and 17th of June, 1809, broke out in the dwelling of a countryman, Jean Etter. The man was absent, and expected to return the same evening, his wife on that account had remained, according to her custom, waiting for him in the room, where she was found alone with her infant. The other four children slept in a little adjoining chamber. All the five children together with their mother perished in the fire.

It was impossible to discover in what part of the house the fire originated. The body of the mother was found nearly destroyed by the flames. Her infant, with its body almost uninjured, lay under her. A few steps further lay the oldest daughter, 14 years of age. The three other children were found together in the centre of the hall.

There was no marriage contract, and the father remained for a while in the quiet possession of the inheritance of his wife, who had brought to him on the marriage a considerable real estate from her paternal and maternal side, as also some stocks and money.

The provincial law in force there permitted to the surviving husband, the usufruct for life in the property of the wife; but, when he claimed the inheritance,

he must present an inventory and give security. According to the laws the property of intestates belonged to the nearest blood relations, who have survived the deceased.

When Etter was about re-marrying, the sister of the deceased claimed, that he should fulfil the requirements of the law, but he refused and the court decided, that the inheritance should be divided: but with this the sister was not content, and her advocate appealed from the provincial law, since, because it was not proved, whether the mother or her children had survived, it must be assumed according to the Roman law and the code Napoleon that the mother was the survivor, and consequently that the sister was the heir of the deceased.

On the other hand, the counsel for Etter contended, on the same authorities, that it was not sufficient, that Marie Knoff for the establishment of her claim, should represent herself as the nearest relative of the deceased, but it rested solely on this, whether she at the time of the death was her next blood-relation, which could not be the case, if only one of the five children had died after the mother. He attempted to prove, how extremely improbable it was, that the mother had survived all the five children, and produced the following striking circumstances.

1. The children, who perished with their mother, were five, and their bodies were found in different parts of the room; they could not thus all at the same time, in the same moment have lost their lives, as was before assumed, if for example, they had all been entombed under the ruins. Also in reference to their different positions it is almost a certainty, that one or another of the children had lived longer than the rest, and it is the extremest improbability, that all five of the children should have died before the mother, and not even one, were it only for a second, had survived her. As to the survivorship of one of the children we may place five against one.

2. The body of the mother was so much destroyed by the flames, that it excited horror, while that of the child, which she had under her, was scarcely injured. The unhappy mother had used her best endeavours to protect her child, and forgot on that account her own danger. Without doubt she covered it with her body and her dress, it was thus covered from the flames and less exposed to the effect of the smoke, while the mother was entirely exposed to them. We have thus reason to assume the survivorship of the child, in respect to the temporary (*momentanen*) protection derived from the mother.

3. The oldest daughter, about 14 years of age, was found a few steps from her mother, her body was entirely uninjured, so that her hair and the ribbon upon it exhibited not the slightest trace of burning. This proves, that not the flames, but merely suffocation occasioned her death. We must not forget, that she slept in the little adjoining chamber, and that, when she came out, the firesmoke must have already reached her mother, even if the flames had not yet destroyed her. At least the following circumstance gives strong reason to conclude, that she was already dead and had perished by the flames and smoke, when the children left their chamber.

4. Three of these children were found together, in the centre of the hall. They had thus fled from their chamber, come through the common room, had opened that door and thus reached the front door. Could they have opened the front door, they would have been saved. Hence it is in the highest degree probable, that already on their flight the mother was dead, for it is natural, that if she had been still alive, she would also have attempted an escape, and have aided all, to reach the front door.

The decision of the superior court is unknown to the author.

A fire broke out at night in the year 1546 in the Castle Blankenburg on the Hartz, and the count and his pregnant wife, as well as the steward and his wife could not escape from the flames. They escaped from one chamber to another, until the two females were suffocated by the smoke; the two men remained alive and were at length taken out from the flames. The countess was 37 years old, the age of the other persons is not given.—*S. Thieringen und der Harz*. 81 Heft. page 56. *Sondenhausen bei Eupel* 1840.

Sixthly. When many persons die at the same time of poisoning.

In the poisonings of many persons by one and the same kind of poison we consider those as dead first, on whose bodies we find the greatest destruction by the poison.

On this point no decision can be based, since indeed the greater the degree of the destruction in the body presupposes a longer life, and there are poisonous substances which produce no destruction in the body, and in corrosive poisons arsenic acts in a twofold manner, as it kills by an effect upon the nervous system, or occasions an inflammation of the stomach and intestines passing into gangrene, to which in the decision of such a case reference must be had. Even in the case, where a person poisons another and afterwards poisons himself, the knowledge of the person of the mixer of the poison is not sufficient to decide the priority of death, since if the poison administered was arsenic, the poisoned person, who first had taken the poison, still may have died last, if the poison produced its effects more slowly upon him, while the poisoner may have died earlier than the former by the more speedy effect of the poison.

Death by poisoning appears to proceed in the reverse order of death by hunger or by bleeding; and the elder to die before the younger.

Persons may die at the same time apparently by poisoning, without this really being the case.

Dr. Roloff relates the case of two men who died suddenly and probably by poison, with whom on dissection no trace of poison could be proved, although the symptoms of disease, as also the appearances on dissection indicated a poisoning, so that Roloff had to leave it undecided, whether the two young people had died of gastritis, enteritis, cholera or malignant typhus. They were two brothers, of whom the eldest was 18 and the youngest 13 years old; the first died Feb. 3, and the last Feb. 21.—*Kopp. Jahrbuch des Staatsarzneikunde*, 7 Jahrgang 1814.

Seventhly. When many persons die at the same time of wounds.

Klose lays down in this case the following principles:

1. With duellists, who die at the same time, the degree of mortality decides for the earlier or later death. 2. If from an examination of the bodies it appears, that the one had been murdered by another, and the murderer had then killed himself: Klose assumes, that the suicide had died last, and cites a recent case, where a man murdered his wife with an axe, but drowned himself. In this case the husband had survived the wife. But on the other hand, had the man thrown the wife in the water and she had died of suffocation, while he had shot himself, the wife may very easily have survived the husband.

3. When in cases of wounds of the same kind the wounded organs of a person are morbid or weak, we may assume, that the persons, who are of the weaker organisation, have died first.

4. If a cannon ball strikes several persons, we may assume, that those have died first, who were struck first.

In the siege of Breslau, a soldier was struck by a cannon-ball on the shoulders and was killed on the spot; the same ball crushed the head of another soldier standing several hundred feet distant.—*Klose, System*, p. 395.

With persons of different sexes, but with wounds of the same nature, Klose assumes, that the female will have died earlier than the male. But it is sufficiently known, that bleeding with women is less dangerous and less speedily prejudicial, and we must therefore assume that the man in such a case has died earlier than the woman. Besides, nature stifles in women bleeding sooner than with men, since the former are inclined to fainting, which is the best means of stopping bleeding.—*Klose, über der Einfluss des Geschlechtsunterschieds*, p. 246:

Eighthly. When many persons die at the same time by cold.

Bernt, Henke and Mendel assume apoplexia cerebialis as the only cause of death from cold; but Niemand (*Handb. der Staatsarzneikunde*, p. 210.) and Grönlund (*Dissertat. de Asphyxia congelatorum*, Helsingfors: 1832) place the cause of death in asphyxia. Metzger assumes apoplexy as the cause of death; but says that cold with a low but uninterrupted degree of coldness, occasions death

by its fatal effects upon the nervous system and the heat of the body; death by cold may be thus sudden or protracted. With these opinions the results of dissection of those who have died from cold coincide. In general, we find in these cases the skin uncommonly pale, the vessels of the head empty, the intestines very full of blood, and the lungs near the pleura inflamed. Klose, l. c. p. 429. Cappel (*Acta Natur Curiosorum*, vol. 3, obs. 28,) found congestion in the breast and the abdomen, and Plouquet (*von gewaltsamen Todesarten*) found the vessels of the head and the lungs filled with blood.

The prevalent circumstances, whether a person was stronger, fatter, better clothed than another, whether one had a tendency to apoplexy or fainting or had drunk ardent spirits, must in reference to the appearances on dissection afford an evidence as to the earlier or later death of the one person or the other. Children and old people are killed by cold, more easily than persons in middle age; but women, who are in the climateric years, are killed by cold under the same circumstances not so easily as men, because they possess proportionally a warmer blood and more animal heat (warmth of body).

Ninthly. When many persons perish at the same time of hunger.

When persons die from hunger at the same time, the place, where it has happened, must first be considered. Thus, death follows later with those who are found in a damp place, a cellar, &c. where they can breathe a moist air or can drink. In reference to sex, women can endure hunger longer than men, who require a greater quantity of more nourishing and stimulating food. Further, weak persons will perish from hunger sooner than stronger ones, younger persons than older ones. Young active men will be destroyed by hunger sooner and more severely, than phlegmatic, quiet, less respirable, old persons, who require less food, than younger ones.

The truth of this position is proved by the melancholy end of Count Ugolino in Pisa, whom the citizens together with his family, closed up and starved in the year 1283, in the Hunger-castle so called. The youngest child, a boy of 3 years old, died first on the fourth day, the three others in youth, the fifth and sixth day, the father in the prime of life, died the eighth day. Dominicus Sala, *Tractat de alimentis*, sect. 1, p. 32. In Oppido, a maiden lived eleven days under the ruins, and in the most horrible proximity to a corpse. She was 15 years old, and the attendant of a child. On the falling of the house, she held the child firmly in her arms, who, tormented by the most torturing thirst, died on the fifth day. Till then she had preserved her presence of mind, but afterwards she experienced the most painful sensations of hunger and thirst. Her despair passed into perfect senselessness, and at the time she felt nothing of the pain of the dislocation of her hip, on the falling of the house. Drink was the only thing which she desired after her deliverance. When asked respecting her condition under the ruins, she answered: *I slept*. Many of those entombed persons were found on being dug out in a stupor-like sleep, in which they had sunk by the falling or after some days, according as their nervous system was strong or weak; many considered themselves as intoxicated.

An old woman lay seven days under the ruins in a state resembling sleep; when she awoke, her only complaint was of burning thirst. T. R. B.

89. *New mode of detecting arsenic.*—Mr. BEVAN communicated to the Surgical Society of Ireland, a new mode of detecting arsenic, which he looked upon as highly valuable in a toxicological point of view; it had reference only to the reduction of the arsenious acid to the metallic state. The manner in which he proceeds is the following: a galvanic circuit is formed by passing a copper wire into a glass vessel containing dilute hydrochloric acid, or still better dilute nitric acid. In order to form a diaphragm between the acid solution and the solution containing the arsenic, oil was first tried, but would not answer; suet melted and poured upon the top of the hydrochloric acid solution; when cold the arsenious acid solution was poured over it, in a few hours metallic arsenic was deposited on the copper wire: he tried it a second time with a perfect diaphragm, and did not succeed in the reduction; by a third trial, however, he again succeeded in

reducing the arsenic upon the copper rod. Mr. Bevan thought this mode much better adapted for experimenting than Marsh's process, especially if it should be used in the country, where other materials were not convenient. As zinc has a greater affinity for oxygen than copper, Mr. B. tried it and found that the metallic arsenic was deposited on it in a flocculent state: the apparatus is a bottle with a narrow neck, and a zinc rod passing through a perforated cork into dilute hydrochloric acid; melted suet is then poured upon it, and when cold, the arsenical solution on the top of all; in three hours the arsenic will be deposited; its quantity may be ascertained, and to prove that it is arsenic, it may be dissolved in nitric acid, and the liquid tests applied in the usual way. Arsenic is reducible by a zinc rod alone, but after a longer lapse of time. In the *Journal de Pharmacie*, it is mentioned that Hugo de Rench performed the experiment, but in a different manner from Mr. B., by using copper filings and hydrochloric acid, and boiling them. Mr. Bevan obtained by his process all the arsenic, in the metallic state, out of the liquor: this process would answer for testing whether blood contained arsenic, as was believed by some chemists, but as he thought without foundation.—*Dub. Med. Press*, Jan. 25th, 1843.

90. *Poisoning by Antimony*.—M. FLANDIN read to the French Academy of Sciences, June 13th, a paper on experiments which he and M. Danger had been performing with this substance, from which it appears, that antimony is easily eliminated by the urine. It is chiefly found in the liver, and not at all in the lungs, nervous, muscular, or osseous systems. It is very important to ascertain the fact of the localization of poisons, as it would prove exceedingly useful in medico-legal questions, as in cases of pretended poisoning.—*Lond. and Edin. Month. Journ. Med. Sci.*, Dec. 1842.

91. *Death from the introduction of needles into the Heart*.—A soldier was brought to the Hospital of Lublin, St. Petersburg, screaming with agony from pain, which he attributed to having introduced two needles into the chest in the region of the heart two days previously. His pulse was hard and quick, his countenance anxious, and bathed, as well as his body, in a copious perspiration. Frequent distressing cough, and acute pain in the precordial region were his most distressing symptoms. Slight crepitous rattle was heard at the anterior and lower region of the left lung, but at other places the respiratory murmur appeared to be natural. The action of the heart was tumultuous, but without particular character. Not a trace of the entrance of the needles existed on the skin of the chest. Copious bleedings with other antiphlogistic measures were followed, without affording almost any relief. Hiccup and loss of speech came on the fifteenth day, but he retained his faculties to the last, and died on the nineteenth day.

When the skin was removed from the surface of the chest, two narrow apertures were seen between the fourth and fifth ribs, which penetrated to the cavity of the chest. On laying open that cavity, these apertures were seen to communicate with an abscess which extended into the substance of the lung. The pericardium was very much thickened, and filled with a semi-coagulated whitish or puriform matter, similar to the plastic matter thrown out on serous membranes. This matter formed a layer of about two lines in thickness on the internal surface of the pericardium and surface of the heart. The heart adhered so intimately by its basic and posterior portion to the pericardium, that it required considerable force to remove it. The pericardium equally adhered by new fibrinous adhesions to the left lung and to the diaphragm. The heart was thickened in its substance, and harder than usual. The inferior margin of the left lung was highly inflamed. The needles were found in the posterior and inferior part of the left lung, having probably made their way to that portion in consequence of the continued movements of the heart and lungs.—*Edin. Med. and Surg. Journ.*, Jan. 1843, from *Archives Gén.*, July 1842.

92. *Death from a large dose of Sulphate of Quinine.*—A man 26 years of age, No. 11 Saint-Madeline's ward, was affected with acute articular rheumatism; he had been shortly before treated in the Hôtel Dieu for small-pox, and having probably left the hospital too soon was exposed to cold, and contracted acute rheumatism, in consequence of which he was admitted under the care of M. Recamier on the 27th November; he then laboured under general fever without any complication; the heart, lungs, and head were not implicated; there was derangement of intelligence; no headache; both wrists were very painful and swollen, but the skin was not red; the knees were also painful, but in a less degree; no pain in the hips. The diagnosis was thus stated. *Acute rheumatism of the joints, with fever of medium intensity*; as to the prognosis it was stated that they would probably be of tolerably long duration; that complications were to be expected, such as inflammation of the serous membranes of the thorax, though nothing of the kind yet existed.

M. Recamier having just witnessed an admirable cure effected in an analogous case, by the administration of sulphate of quinine, to a lady, in private practice, resolved to employ the same treatment in this case. He prescribed the first day three grammes (46½ grains) in twelve papers, one to be taken every hour. No bad effect resulted.

The next day the pains were diminished in the lower extremities, but were more severe in the wrists. On a careful examination of the heart, no bruit de soufflet could be detected, but its pulsations were not quite so distinctly clear as natural.

The second day five grammes (77 grs.) of sulphate of quinine were prescribed; to be taken in the same manner as the first day. The patient had only taken 3½ grammes when he was suddenly attacked with extreme agitation, followed by furious delirium, and death occurred in a few hours.

On dissection, the signs of a general and most intense meningitis were discovered; considerable sanguineous effusion of the meninges; penetrated vascularity of the surface of the brain, of which some points, more intensely inflamed, presented a commencement of softening; the quantity of serum in the ventricles was natural.

While the foregoing case was in progress, a similar but less disastrous one occurred under the care of M. Husson, in the person of a patient affected with symptoms of rheumatism, closely resembling the above mentioned. Six grammes of sulphate of quinine were administered; after the ingestion of the last dose, the patient fell into a state of prostration, rapidly followed by extreme agitation and delirium, to which soon succeeded excessive debility and complete immobility. The pains, however, had disappeared.—*Gaz. des Hôpitaux*, Dec. 8, 1842.

93. *Cases of Poisoning by Sausages.* By Dr. ROESER.—The family of Ehrmann at Limmethausen with a number of guests partook of a supper of pork sausages, in consequence of which all were more or less affected with symptoms of poisoning, eight with severe symptoms, and three died. The sausages were made of the liver of a healthy pig, prepared eight days previously, slightly boiled, then smoked, and hung up. There must have been something peculiar in the taste of the sausages, as one of the guests remarked that they were not wholesome, and did not partake of them, in consequence of which he escaped. The symptoms were similar in all, differing merely in degree. Shortly after partaking of the sausages, pains in the bowels, vomiting, giddiness, dryness of the mouth and throat, and difficulty of swallowing came on. The pupils soon became dilated and fixed, the headache and vertigo increased, and the power of vision was destroyed. Great prostration of strength followed, the power of speech was lost, the abdomen painful to the touch, the pulse small, weak, and frequent, and at last intermittent. The respiration became difficult, the power of swallowing was lost, lividity of the countenance came on, spasms of the muscles of the extremities and rapid death. The deaths occurred within 36 hours after eating the sausages.

The morbid appearances were analogous in the three fatal cases. The brain and spinal marrow were healthy, the sinuses filled with dark blood, but the veins of the *pia mater* not injected. The palate and tonsils red; the last much larger than natural, and covered with small suppurating abscesses. Ecchymosed spots on the tongue, and the papillæ on its posterior part injected and prominent. The lining membrane of the larynx and epiglottis of a deep blue colour, and their vessels much enlarged in size. The tracheal membrane to the bifurcation of the bronchii of a deep or blackish red colour, marbled with clear spots, sanguineous suffusions, and vascular net-works. The bronchii were of a deep red colour and filled with bloody mucus. The lungs were of a deep red, gorged with blood, did not crepitate on pressure, and were friable. The left lobe of the liver was livid and flaccid, the other parts of a clear brown, and friable. Gall-bladder full of black bile. The spleen was double its usual size, and in consistence and appearance resembled the lees of wine contained in membranous cells. The œsophagus was of a remarkable white colour, covered with a white false membrane. The stomach was natural in appearance externally, but its internal surface presented a marbled appearance, especially towards the cardiac orifice. The intestines, on their peritoneal surface, presented a grayish black appearance mottled with red spots, as occurs in some forms of enteritis. The duodenum internally was of a black colour, the other portions of the intestines nearly healthy, only here and there arboriform injection and ecchymosed spots were seen. The kidneys were of a deep red, and gorged with blood; the bladder full of urine. The other organs were apparently healthy.—*Edin. Med. and Surg. Journ.*, Jan. 2, 1843, from *Medicinisches Correspondenz-blatt*, July, 1842.

MISCELLANEOUS.

94. *Composition of confined air.*—M. FELIX LEBLANC read to the Academy of Sciences of France, on the 6th June last, a very interesting memoir on this subject. The author has analysed, according to the process of MM. Dumas and Boussingault, the air taken from many different places, and the following are the results of his researches.

Air of greenhouses. In the air collected in the evening, the relative proportions of oxygen and nitrogen were the same as those in the open air; but the carbonic acid was found to have completely disappeared under the influence of vegetation.

Air of bedrooms. In the one experimented on, there had been a fire during the afternoon. Eight hours after it had been put out, the air showed on analysis the same composition as that of pure air.

Air of Hospitals. In the ward "rosaire" at La Pitié, which had been kept shut during the night, the air contained nearly 3-1000ths of carbonic acid, or a quantity five times greater than that of pure air; the oxygen had experienced a corresponding loss. In one of the dormitories of La Salpêtrière, the air gave 8-1000ths of carbonic acid. This is the largest proportion the author has yet found in hospitals.

Air in public lecture rooms. In the lecture room of the Sorbonne, which is capable of containing 1000 cubic metres of air, after a lecture of an hour and a half in length, and at which 900 people were present, the oxygen was found to have lost one in every 100, although two doors were open; while the carbonic acid was rather increased in a greater ratio. This proves, in a marked manner, the utility of artificial ventilation in like circumstances.

Air in a ward in an institution for children. Although the door was half open, and there was an open space in the roof, (*visistas*), the air was found to contain 3-1000ths of carbonic acid, and a proportional diminution of oxygen.

Air in a schoolroom. This room (that of the 11th Arrondissement) was ventilated by means of an apparatus constructed by M. René Duvoir, after the method of M. Pecllet. When the room had been occupied five hours, 16-10,000ths of

oxygen had disappeared, and the carbonic acid had increased to more than 2-1000ths.

Air in the Chamber of Deputies. The carbonic acid was 25-10,000ths, and it is likely that the proportion would be more than double on those occasions when the chamber was twice as well filled as it was on the day that the experiment was made.

Air in a theatre. At the Opera Comique, a little before the close of the performance, the air of the pit contained 23-10,000ths of carbonic acid, and in the highest part of the theatre, it even rose to 43-10,000ths.

Air in the stables of the Ecole militaire. In one of the stables, one part in every 100 consisted of carbonic acid; and in another, 2-1000ths only of this gas were found.

M. Leblanc has made a number of experiments, which prove, that animals can support, without sinking immediately, carbonic acid in larger doses, than what is found in air rendered fatal by the introduction of this gas from the combustion of charcoal. We must then seek for other causes to explain the violence of the effects seen in this latter case.

We ought to admit, as experiment has proved, that the quantity of carbonic acid in close and confined situations, and which is almost always appreciable, should increase according to the presumed degree of insalubrity. The greater the quantity of carbonic acid, the more is the necessity for a renewal of the air; and respiration cannot be carried on in a normal manner, if it exists in the proportion of one part in 100. From the experiment of M. Peclet, from six to ten cubic metres of air are required per hour, in order that the respiration be carried on in the usual way. These partially agree with M. Dumas' experiments on respiration. In places which are inhabited, and which have no proper apparatus for ventilation, and are without chimneys, the air is renewed very imperfectly by the joints in the doors and windows, and only twice as well as in a room completely closed. Life cannot be prolonged beyond a few moments, where the atmosphere contains thirty parts of carbonic acid in every 100. The higher the natural temperature of an animal, the less can it resist the asphyxia from carbonic acid. There is no decisive experiment on the degree of alteration which the air must undergo before it becomes asphyxiable by the burning of charcoal. M. Leblanc has shown, that an atmosphere containing three or four of carbonic acid in every 100 parts, proved suddenly fatal to a large dog. This was totally independent of temperature, and death took place before a candle ceased to burn.—*Lond. and Edin. Monthly Journ. Med. Sci.*, and *Gazette Med. de Paris*, 11th June, 1842.

95. *Open Foramen Ovale in an adult.*—Mr. H. J. JOHNSON related to the Westminster Medical Society on the 17th Dec. last, the case of a woman who was admitted into St. George's Hospital with intractable ulceration of the leg. Her complexion was remarkably dingy, but not at all cerulean. She died of erysipelas. On examination of the body the foramen ovale was found so patent that two fingers could be passed from one auricle to the other. The heart was large, flabby, and somewhat dilated. He thought an open condition of the foramen ovale of no serious consequence, unless accompanied by some malformation. In this case there was no symptom of its being open.—*Lancet*, 18th Feb. 1843.

AMERICAN INTELLIGENCE.

Of a new knife for dividing the stricture in cases of Strangulated Hernia, so constructed as to prevent the lesion of any other parts than those constituting the stricture, by T. CAMPBELL STEWART, M. D., [with a wood cut.]

The most dangerous accidents which can supervene, in an operation for the relief of strangulated hernia, consist in the division of arteries, and wounds of the intestine, when the case is one of intestinal hernia; hence all surgeons admit the necessity for great caution in performing the delicate operations required in these cases, and more especially when the stricture is seated in the inguinal canal, in consequence of the proximity of the epigastric artery; a lesion of which is attended with the most serious consequences.

The instruments generally in use for operating in these cases, consist of knives of various forms and shapes, but generally narrow and probe-pointed, with but a short cutting space. Although Dupuytren frequently used a straight, sharp-pointed, convex knife, the concave, probe-pointed bistoury of Pott is the one recommended by the late Sir Astley Cooper, and most generally in favour with modern surgeons.

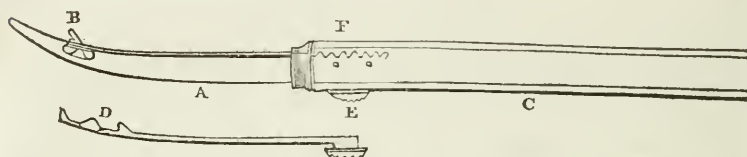
It is with the view of simplifying this operation, which we are sometimes called on to perform suddenly, and at a distance from assistance; and of rendering it always safe, that I have imagined the instrument, a description and engraving of which is annexed. It may be used for all varieties of hernia; but is for inguinal and crural hernia in particular, that I consider it as specially adapted.

The instrument is composed of a small convex knife and a hollow canula or tube. The knife is concealed in the canula, which presents at half an inch from its extremity, a notch of about two lines in length, and one line deep, for receiving the membranes which constitute the stricture; this opening is closed at top by a steel blade, presenting at one end a small shoulder, and at the other a wire spring concealed in the handle. The knife, small and convex, is strengthened by a shoulder on each side projecting a little higher than itself, and protecting its edge from contact with the canula, into which it is introduced through an opening in the back of the handle. The object of having the knife movable, and convex, is to admit of its cutting *both ways*, and also of its being withdrawn, for the purpose of cleaning and sharpening.

The instrument is used in the following manner:—

So soon as the sac constituting the hernia, shall have been laid bare and opened, the canula containing the knife is to be introduced, flat between the intestine and the stricture: as soon as it has entered, the instrument is turned, so as to bring its upper surface in contact with the part to be divided, and then pushed gently and cautiously onwards; after penetrating a short distance, its further progress is arrested by the small shoulder at B, the blade of which, however, being terminated by the spring F, yields to

continued pressure, so far, and *so far only*, as may be necessary to admit the constricting membranes. These being now engaged in the excavation, the knife is made to move forwards and backwards, by pushing and withdrawing the button at E, with the index finger of the right hand, so as to incise as much of the membranes as may be thought necessary to permit the reduction of the hernia. The structure may be thus divided, above, below, or on either side of the intestine.



A. The canula of silver, steel, or platina 2 inches long— $\frac{1}{2}$ line thick and tapering at the extremity. One line broad at the point and two lines at the base, presenting a notch $\frac{1}{2}$ inch from its extremity of two lines in length, and one line deep. The upper surface is furnished with a superficial groove for the steel blade connected with the wire spring.

B. The shoulder at the extremity of the steel blade, to prevent the canula from entering beyond the stricture, until forced to yield. It projects one-fourth of a line.

C. Ivory or bone handle 3 to 4 inches long and $\frac{1}{2}$ an inch thick, having a groove underneath to admit the passage of the knife.

D. The knife blade with its shoulders on each side, and made to fit the canula.

E. Button attached to the end of the knife, for moving it forwards and backwards.

F. Wire spring concealed in the upper part of the handle, and sufficiently strong to keep the blade pushed forward over the excavation in the canula, when it is being introduced.

Fatal Singultus following the bite of a rabid dog. By W. L. WHARTON, M. D., Surgeon U. S. Army.—The lands in the immediate vicinity of Fort Gibson, Ark., are occupied by various tribes of Indians, who have been removed west by the government within the last few years. During this period that section of country has been noted for the annual visitation, in the autumnal months, of rabid animals. This liability may be inferred from the number of dogs, arising from the Indians' partiality for them, and scarce a fall passes without the propagation of that terrible venom "Rabies Canina," amongst the wild stock, as also the small "Prairie Wolf."

It was during my period of service at the above named military station, that the following melancholy incident occurred.

On the night of the 9th of October 1840, as two of his comrades were conducting a soldier of the 4th Regiment of Infantry, then under the cold stage of fever, to the hospital, and when in its immediate vicinity, they were attacked, with great ferocity, by a rabid dog, which inflicted a wound on the poor fellow, to the extent of removing the nail, and entire true skin from the first phalanx of the right thumb.

A few moments subsequently, as Capt. —, the officer of the day, was

passing the usual rounds of the night, in the neighbourhood of the place where the soldier had been bitten, he was attacked by the same dog (the description answering that of the two soldiers who conducted the invalid), which seizing the right foot, as Capt. — expressed it, “with a wolfish gnash of the jaws,” tore off the entire top of a stout brogan shoe. Instantly retreating into an adjoining set of quarters, this officer there found my “assistant surgeon” engaged in removing by incision, a piece from the leg of Lt. —, who attracted by the scream of the soldier, above alluded to, had rushed out to his assistance, and was bitten by the same dog, on the upper and outer part of the left leg, in a spot thinly covered by integuments. Two of the teeth only, in this instance, had merely entered the flesh, having previously however passed through several thicknesses of garment, and thus has followed his non-infection. I have been thus particular that the condition of the dog may be inferred.

During the first twenty-four hours after entrance into the hospital, the situation of the soldier was alarming, from a protracted chill, caused in a measure, I have no doubt, by fright. He was on the morning of the fourth day, however, relieved from the return of the paroxysm of fever, and under tonic treatment.

Prevented by his condition in the first instance, from removing the thumb by amputation, as was my desire, I deemed it afterwards useless to do so, but resorted to the removal of partially detached portions, and free cauterization. The condition of the wound up to the 21st, had induced me to continue the treatment subsequently adopted, the application of emollient poultices, every three or four hours. At this date, however, an evident change occurred in the wound, an irritable state, and ichorous discharge, succeeding a healthy pus and appearance, the patient at the same time being seized with *singultus*, which continued until the 10th November without intermission, except during sleep produced by morphine.

The treatment pursued, having reference to the wound, and internal remedies, it had not I confess occurred to me throughout the existence of this symptom, to examine the *cervical portion* of the *spinal column*. I did so, however, on the morning of the 11th, and the extent of irritation may be inferred from the fact that when I pressed thereon with the finger, the patient exclaimed, “for God’s sake, don’t press there, it is like a boil.”

The abstraction of $\frac{3}{4}$ ij of blood by cupping on the part, followed by the immediate application of a blister thereon, resulted in the entire relief of the *singultus*.

The patient died two days afterwards, apparently *worn out*, by this protracted symptom, retaining his intellect to the last, and unaffected by fear, but talking rationally about the injury he had received, &c.

The different theories which have arisen as to the proximate cause of “Hydrophobia,” furnish a proof of the obscurity which has ever involved this truly *opprobrium* to our profession.

By some writers the cause is located in inflammation of the *medulla spinalis*, whence the effects of the disease is propagated; and does not the occurrence of *singultus* in the present case, sustain that belief?

FORT LEAVENWORTH, Mo., Nov. 23rd, 1842.

Case of Premature Birth. By A. B. SHIPMAN, M. D.—Mrs. Edward C. Eldridge, ætat. 24, mother of two children, gave birth to a female child on the 31st of December 1841. I was present at the birth, which was

easy and rapid. From the best data which the woman could furnish, that of the cessation of the catamenia and quickening, she supposed herself at the commencement of the sixth month of utero-gestation. The appearance of the child also indicated no further advance, it being barely alive, with little motion, and was too feeble to cry. It had no nails, or hair on its head, and the cranium was not firmly ossified, with the sutures and fontanelles widely open. I did not examine its eyes, therefore can say nothing of their appearance. The child was wrapped in a blanket and laid away, while the woman was being put to bed. On examining the child it was found more lively, and was washed, dressed, and fed; it continued to live, and in about a week from birth had convulsions, which recurred daily for three weeks, when they ceased. At the end of the seventh week it was weighed for the first time, when its weight was found to be *one pound ten ounces!* and which was probably about the true weight when it was born. From that time to the present it has grown gradually, and is now ten months old, weighing ten pounds eight ounces, and is lively playful, and healthy. It has never been able to nurse. I regret not having measured it at the time of its birth, but as I had no hopes of its living at the time, and expecting its death daily for two months, it was neglected. The mother is again in the fifth month of pregnancy, and is healthy and robust. She attributes the premature birth to a fall which she received a few days previous to her confinement.

Case of Remarkable Precocity in a Male. By A. LOPEZ, M. D. [Communicated in a letter to the Editor.]

DEAR SIR—There is now being exhibited in this city a precocious male child, of whom the following particulars have been carefully obtained by myself, with a view of forwarding them for publication in your journal.

Anderson, the child of a mulatto woman, belonging to Mr. Wm. Bennett, of Mississippi, was born on the dividing line between Loundes and Monroe counties in that state, on the 7th day of April, 1839, making his age at the present date three years, 10 months and 15 days.

The following proportions of this wonderful boy have been accurately taken by myself.

Weight	82 lbs.	Transverse measurement of	
Height	4 feet $\frac{1}{2}$ inch.	head from the top of one	
Width across the shoulders	16 $\frac{1}{2}$ in.	ear to the other	12 $\frac{1}{2}$ in.
“ around the chest	27 $\frac{1}{2}$ “	From between the eyes	
“ “ the belly	27 “	across the vertex to the	
“ “ the thigh	19 “	occiput	17 $\frac{1}{2}$ “
“ “ the calf	12 $\frac{1}{2}$ “	Circumference of head	22 “
“ “ the ankle	7 “	Depth of face from the lower	
“ “ the biceps		part of os frontis to	
“ “ muscle	11 “	the extremity of chin	6 $\frac{1}{2}$ “
“ “ the arm	9 $\frac{1}{2}$ “	Length of the arm from the	
“ “ the forearm	10 “	tip of the middle finger	
“ “ the neck	13 $\frac{1}{2}$ “	to the acromial junction	20 “
Width of the hand, dorsal		Length of penis at rest	4 “
aspect	4 $\frac{1}{2}$ “	Circumference of penis	3 $\frac{1}{2}$ “

His scrotum bears a fair proportion to his other developments, but the *testes* have not descended. The pubes is covered abundantly with a thick

curly hair, the appearance of which was observed when he was one year old. He has whiskers and a growing beard. His axillæ are filled with hair. The mammaræ are large and prominent. The hair on his head very thick and curly. His *teeth* are only twenty in number, corresponding with the first set, and are particularly characteristic of infantile dentition, which he completed at the expiration of his first year. His countenance, although precocious, is indicative of the child, so also his intellect. He speaks distinctly, in a deep toned, strong voice. His disposition is playful and cheerful, and ordinarily amiable, but whenever he has been excited to anger his temper is terrible, and has never been subdued by punishment. This, however, rarely occurs. He lifts with perfect ease from the ground a man weighing 140 lbs. and can cut with an axe, a log of wood as large round as his own body. His face, neck, shoulders and chest are fully covered with the *acne simplex* of puberty.

Upon inquiring whether he had experienced venereal appetite, or has had seminal discharges, his attendant was unable to answer, but thinks from evidences occasionally noticed on his shirt, that the discharge has occurred. The *alvine discharges* are not oftener than once in three days, frequently being postponed for a week without any inconvenience. He has never been sick from his birth, and enjoys uninterrupted health. He sleeps quietly and soundly at night, but is uncommonly active and wakeful during the day. *Appetite* not remarkable, but good, and digestion perfect. He drinks frequently and abundantly of water if indulged, and urinates very freely and often, in a bold large stream. The *pulse* is full and regular, giving 84 strokes in a minute. The parents of this boy have had two other children not distinguished by anything remarkable.

The birth and circumstances of this extraordinary child are duly attested by the midwife who officiated, and corroborated by the certificates of many respectable professional and private gentlemen of his neighbourhood.

I omitted to state that they report the umbilical cord to have been of unusual dimensions, the exact measurement I have not ascertained.

Very respectfully your ob't servant,

A. LOPEZ.

MOBILE, Alabama, Feb. 22d, 1843.

Trial of Charlotte Hamblin, alias Charlotte Ewing, for the murder of Andrew W. Ewing, at Mobile, state of Alabama, in November, 1842.

The deceased was an actor by profession, aged about twenty-five years, and of intemperate habits. On the night of the 25th of March, while playing his part at the Theatre, he and his wife came off together from the stage, and while doing so, she asked him why he had not been home that day. He replied, that it was none of her business, and at the same time struck her with his fist or hand, and knocked her against the scene. Ewing then left to go down stairs, and his wife followed him. In a very few minutes thereafter, two witnesses depose, that they met her at the foot of the stairs, holding a weapon of some sort in her hand, and exclaiming that she had killed him. Deceased was found lying across the threshold of the dressing-room, speechless, with two wounds in his right arm.

He was proved to have enjoyed good health for several years, and to have played parts which required great physical exertion. It was also stated that he frequently engaged in billiards and ninepins, and never complained of fatigue or difficulty of respiration. For the prosecution, Dr. Kelly deposed, that on being sent for, he found Ewing dead. There were

two wounds upon the right arm, by which the basilar artery was cut in two places—these wounds were near the olecranon and superficial, upon the inner and lower side of the arm. There was another wound upon the left side of the body, between the false ribs and the iliac region, obliquely and upward. Dr. Kelly did not attend the dissection, but upon introducing a probe into the wound, he found that the dagger had penetrated at least two or three inches in the direction of the stomach and spleen. He could not say, whether the deceased came to his death by the wounds received. He did not observe any arterial blood issuing from the wound.

For the defence, it was proved, that Ewing was quite excited that evening, but not so as to interfere with his business—that after the wound had been inflicted, his wife exclaimed, “why have you struck me,” and repeatedly implored forgiveness. It would also seem that the dagger she wore, was appropriate to the part which she was acting.

Dr. Levert examined the body, and at first supposed that the wounds were the cause of his death. The following appearances were observed. The abdomen was full and much distended; two slight wounds on the right forearm, and a slight wound apparently on the left hypochondriac region. There was no hemorrhage from this wound, but upon moving its lips with the finger and thumb, a small quantity of dark coloured blood was seen to issue from it. On opening the abdomen, its whole cavity was found filled with blood, and which had evidently caused the distension noticed above. Dr. Levert’s first impression was, that some important blood-vessel had been opened by the knife with which he had been stabbed, but upon tracing the wound with great care, he soon ascertained that no vessel of any size had been touched. The knife had entered the left hypochondriac region, just under the margin of the false ribs, its direction was a little upwards and inwards, it passed through the mesocolon, near to the gut, but without wounding it, and into the cavity of the stomach near its large extremity. It entered the cavity of the stomach, without passing through its opposite side, and the wound was small, being made merely by the point of the instrument.

Dr. Levert remarks, that as there was no blood-vessel of sufficient importance injured in the track of the wound, to account for the sudden death, or for the immense quantity of blood found in the abdominal cavity, he came to the conclusion that some cause, other than the wound with the knife, must have produced the fatal result in so short a time. After sponging the blood from the abdomen, he discovered a large aneurismal tumour, which occupied and almost entirely filled the right iliac fossa. This aneurism had been ruptured at a point below and to the right of the duodenum. It was thus one of the descending aorta, and from the large quantity of fibrinous matter which it contained, and the very attenuated condition of its parietes of long standing. The witness hence came to the conclusion, that as the knife had not passed near the aneurism, its rupture must have been caused by his high state of mental excitement, increased by the spirits which he had taken, and on the trial his testimony was to the above effect.

The jury, after an absence of about ten minutes, returned a verdict of not guilty.

I am indebted for the above facts, to a newspaper account of the trial, and also to a communication from Dr. Levert to Professor Horner, both of which have been kindly forwarded to me by Dr. Hays.

The resemblance between this and some others noticed under the head

of Medical Jurisprudence in the summary of the present number, is worthy of consideration.

T. R. B.

Rupture of the Spleen.—Dr. A. G. WELCH, of Annapolis, Md., has communicated to us a case of rupture of the spleen, in a boy 17 years of age, caused by a kick by a man on the abdomen. Death ensued an hour after the injury. On post-mortem examination, as in similar cases, the abdomen was filled with blood. The spleen, which was torn in three different places, was “nearly double the natural size,” and “so very soft that when taken out and held up, it would scarcely hold together.”

Cataract operated on at a very advanced age.—Dr. WM. M. BOLING, of Montgomery, Alabama, has sent us the details of a case of cataract in a negro man, said to be 110 years old, in which he successfully operated by couching. One eye only was operated on; very little inflammation followed, and in a short time his vision became “better than that generally enjoyed by persons of his age.”

Singular case of congenital deformity, by SAMUEL LILLY, M. D. of Lambertville, N. J. [Communicated by Prof. HODGE.]

On the morning of 16th Nov. last, I delivered Mrs. D—— H—— of a son, after an easy labour of a few hours duration. The child after the delivery did not cry out, and a considerable length of time elapsed before respiration was established; it was then accompanied by a convulsive rattling noise. No particular examination was made at this time except that the lower jaw was discovered to be much shorter than the upper, presenting the appearance of an entire want of chin. On my visit the ensuing day, I found that the child had not yet cried, and that the rattling respiration continued. The nurse informed me that she could not pass a spoon into the child's mouth, and that but few drops of fluid had passed into it. On close examination I discovered that the mouth could not be opened, and that a fleshy adhesion existed between the front part of the alveolar process of the lower jaw and the roof of the mouth; it was about one-fourth of an inch wide, and three-eighths of an inch long, the long diameter extending into the mouth; a hooked probe could be passed entirely around it, inserting it at one corner of the mouth it would emerge at the other. Under these circumstances, after consultation with my uncle, Dr. John Lilly, we concluded that the only possible chance for the child to live was to divide the adhesions—true, the hemorrhage necessarily following it might prove immediately fatal, but that the child must surely die in a short time from want of nourishment. These views were fully and candidly stated to the parents, who consented to the operation. Passing a probe-pointed curved bistoury behind the adhesion, I divided it without difficulty.

The child immediately and for the first time cried out. The blood soon filled the mouth, and was suffered to run out, the child being held in a position favourable. The hemorrhage could not be restrained; limbs cold; and styptics were in vain used. The cautery was not (owing to the refusal of the parents) tried. The hemorrhage gradually abated; the rattling noise which had attended the respiration ceased, and a hope was entertained that the child might survive; but the hope was vain; it expired in about four hours after the operation.

Urgent professional engagements, much to my regret, prevented my making a post-mortem examination.

Annual Report of the Obstetric Practice in the Philadelphia Dispensary for the year 1842, by JOSEPH WARRINGTON, M. D. Obstetric Physician.

One hundred and eighteen women have been delivered at the full period of utero-gestation.

The average duration of labour in 91 cases, was 12 hours 41 minutes, the extremes being one hour, and 76 hours.

The average amount of time required for the spontaneous delivery of the placenta in 97 cases, was 18 minutes; the extremes being from one minute to 60 minutes.

Special manual assistance for the delivery of this mass, was rendered in 8 cases. In one, after a delay of about 15 minutes; in two, after 20 minutes each; two, after 30 minutes each; one after 45 minutes; one after 480 minutes, and one after 510 minutes. The manual assistance was rendered in the first instance alluded to, in consequence of profuse hemorrhage, which persisted so long as the placenta remained within the uterus; it was therefore removed at my suggestion, and the hemorrhage instantly subsided.

The delay or impracticability of spontaneous expulsion in the cases alluded to, of two for 20 minutes, two for 30 minutes, and one for 45 minutes each, was chiefly owing to the fact that the placenta presented its whole disc to the os uteri, presenting thus too large a circumference to pass through it, until the inner surface of this mass was artificially put into a new relation with the opening through which it had to be extracted.

In the respective instances of delay for 8 hours and 9 hours each, the uterine failed of tonic contractions, even under frictions pretty freely practised upon the abdomen, and occasional tension of the cord. The introduction of the hand became necessary, finally, for the purpose of exciting contractions, as well as changing the direction of the placental mass. Two of the placenta manually delivered were found in a state of extreme tenderness, almost like a coagulum of blood. In no case was the placenta adherent.

There were three cases of rigidity of the os uteri, to a degree to require free bleeding from the arm in time of labour to relax the parts. This practice promptly answered in two of the cases; in the third it became necessary also to nauseate the patient with doses of tartar emetic. The labour afterwards went on rapidly, and terminated favourably. Three cases were observed to have the os uteri dilated an inch and a half, for one week previous to delivery.

The uterus in one case remained very large, rather hard and painful for several days after a ready expulsion of the fetus and its appendages: the os uteri was found rigidly contracted in this case, and the parietes of the organ thick and incompressible. The lochia were as abundant as usual, and the milk freely secreted. Anodyne liniments were applied, and laxatives were administered. The tumefaction subsided by the end of the sixth day; wine of ergot had been given directly after parturition but without apparent benefit.

Of one hundred and eighteen children born, 69 were boys and 49 were girls.

The fetuses presented their cephalic extremity to the os uteri in the time of labour in 116 instances: the breech in one case, and in one other, both hands.

There were 66 instances of purely first position of the vertex, and three instances of deviation from that position.

There were 9 instances of purely second position of the vertex, and two instances of deviation from that position.

There were three instances of deviation from the fourth position of the vertex.

There was one instance of purely fifth position of the vertex; it was by manual assistance converted into the first position of the vertex.

There was one instance of presentation of the side of the head, apparently a deviation from an original first position of the vertex. This mal-presentation was rectified by the use of the hand.

There was one instance in which a hand presented by the side of the head: it was successfully pushed up, above the brim of the pelvis, by artificial means.

There was one instance in which both hands presented at the os uteri while the head was in the iliac fossa, above the superior strait. In this case the foot was brought to the inferior strait, by the introduction of the hand, for making pedalic version; that the descent of the breech was completed by the aid of the blunt hook.

There were two instances of prolapsus of the cord during labour.

In one case the cord was very long, coiled twice around the child's neck, and also tied in so firm a knot, as to cause very considerable atrophy of the fœtus.

In the other case it was placed up above the brim of the pelvis, and the child escaped safely by it.

The vectis was used in two cases, to rectify deviations of positions when the hand had failed.

The blunt hook was resorted to in three cases; in two to assist delivery, where the shoulders had been retained within the inferior strait, and in a third case to assist in bringing down the breech, when only one foot had been brought down in the attempt at version by the feet.

The forceps was used in one case to terminate a labour which had existed 24 hours, in a woman, aged 32 years, pregnant for the first time. The most powerful uterine contractions, excited by ergot after full dilatation of the os uteri, being insufficient to expel a large, dead, male child, through the inferior strait of the pelvis.

In a second case to extract a child through a pelvis, the antero-posterior diameter of the superior strait of which was evidently shorter than normal, after unsuccessful attempts had been made to correct a deviation of the head, by the hand and vectis.

In a third case for terminating a labour which had existed 25 hours, in a patient affected by amaurosis.

In a fourth case to expedite delivery in a labour which had already continued 36 hours, during which time the head had been advanced only to the cavity of the pelvis.

In a fifth case to overcome the resistance offered by a small pelvis. This was the second time this woman was delivered by the same means.

In a sixth case, to terminate a labour which had continued 30 hours, in a patient who had complained of extreme uterine and abdominal tenderness, for about two months previous to labour.

In a seventh case, to assist the delivery of a large, dead male child, in a small woman, whose labour was attended by so much cerebral and gastric disturbance, as to threaten convulsions; while every uterine contraction would occasion such spasmodic action in the stomach, that it would jet out through the mouth a considerable quantity of yellowish fluid like diluted bile; all the unpleasant symptoms subsided instantly upon the evacuation of the uterus.

In an eighth case, to terminate a violent labour of 23 hours duration, with a male child whose head measured, directly after birth, seven inches in the occipito-mental diameter, and four inches for the occipito-bregmatic and bi-parietal diameters, each.

In a ninth case, this instrument was attempted for the purpose of delivering a very large head through a contracted pelvis, after the body had been brought down by the hand and blunt hook. In this case the perforator and crotchet were ultimately found necessary before the delivery could be completed. This woman was pregnant for the twelfth time. She had required manual or instrumental aid for all her previous children, except two, who were delicate females. Except these two all the others were still-born. In this case the child weighed eleven and a quarter pounds, after the complete evacuation of the brain, which was rendered indispensable to the completion of the delivery.

Ergot was administered in one case to increase uterine contraction, which had become feeble, after 70 hours duration, during two of which the os uteri had been dilated.

In a second case, for exciting uterine contractions, which had become suspended after version by the feet had been effected in a cross presentation.

In a third case, to arouse the action of the uterus, which had become entirely suspended after a complete dilatation of the uterus and vagina.

In a fourth case, to urge the uterus to more vigorous action, for the expulsion of a large child, which had been retained long in the superior strait after the soft parts were amply dilated. No benefit was derived from its use in this case, as recourse was necessarily had to the forceps, to extract the child.

Ergot in substance, or in vinous solution, was also administered in one case, in which the uterus appeared to remain engorged for a number of days after delivery.

It was used in four cases of hemorrhage after delivery. In all these cases its use was accompanied by free frictions over the uterus. The remedies applied were promptly successful.

There were three cases of metritis; one of them to a very violent degree; they were all cured by active anti-phlogistic treatment, particularly by free vascular depletion.

There were five cases of metro-peritonitis. Three of these cases terminated fatally; two of them after receiving prompt and faithful attention, though under exceedingly unfavourable circumstances for treatment, and the third without any treatment whatever, the patient having positively refused to obey any of our directions. All the rest of the women have recovered.

Three of the children appear to have died in utero some time before the completion of the term of gestation.

A fourth was born dead at the end of 72 hours labour, in a woman who had given birth to still-born children six times in succession.

A fifth and sixth died during labour, in cases in which the resistances offered by the pelvis, or perineum, could not be overcome in sufficient time.

A seventh was born anemic, and died asphyxiated in a few moments after birth.

An eighth died during efforts to deliver by version. A ninth died in convulsions attended by partial cyanosis, in a few days after rapid delivery.

A tenth died in convulsions a few days after birth, from intestinal irritation apparently reacting upon the brain.

There were four cases of asphyxia at the time of birth, from which the children were recovered.

One child had croup coming on within two weeks after birth. It recovered.

One child, born in a very feeble state, of a mother who had previously been in a wretched condition, is said to have died of marasmus, some weeks after the child had passed from under our immediate care. In every other respect the children were doing well at the time we suspended our attendance.

Statistics of Pulmonary Consumption in the cities of Boston, New York and Philadelphia for thirty years. By GEORGE HAYWARD, M. D.—With a view of ascertaining whether pulmonary consumption was on the increase or decrease in this country, Dr. H. has presented in a tabular form, the whole number of deaths from every cause, for each year for thirty years, and also the number from consumption, during this period, in the cities of Boston, New York, and Philadelphia. By this method we can only arrive at an approximation to the truth, but unfortunately bills of mortality are not usually kept in the United States, and of course perfect accuracy is not attainable.

“The most striking fact brought to light by these tables, is the great decrease of deaths by consumption in these cities. This decrease has been great in all, but greater in Boston than in either of the others; and this is not only a relative, but an absolute decrease, for the mortality has been somewhat more during the last ten years than it was thirty years ago. At that time the deaths were about 22 to every 1000 inhabitants; and now they are nearly, if not quite, 23 to 1000. It will be seen by these tables, that in Boston during the first ten years, the whole number of deaths was

	8741	By consumption,	1896	being 1 in 4.622
Whole No. 2d 10 yrs.	12379	"	2046	" 1 in 6.050
" 3d "	17406	"	2396	" 1 in 7.587
<hr/>				
" for 30 yrs.	38616	"	6243	which is equal
to 1 death by consumption in 6.185 of the whole number.				

In New York,

Whole No. 1st 10 yrs.	27,080	By consumption,	6061	being 1 in 4.451
" 2d "	45,552	"	8010	" 1 in 5.686
" 3d "	79,853	"	13415	" 1 in 5.952
<hr/>				
" for 30 yrs.	152,480	"	27486	" 1 in 5.547

In Philadelphia,

Whole No. 1st 10 yrs.	23,582	By consumption,	3629	being 1 in 6.498
" 2d "	37,114	"	5522	" 1 in 6.721
" 3d "	52,900	"	7070	" 1 in 7.482
<hr/>				
" for 30 yrs.	113,596	"	16221	" 1 in 7.003

"Thus it appears, that during the whole period embraced in these tables, Philadelphia has suffered less from consumption than either of the other cities; the average number of deaths from that disease for the whole time being as 1 in 7.003 of the whole number; while in Boston they were as 1 in 6.185; and in New York as 1 in 5.547. But during the last ten years, Boston has enjoyed the greatest exemption. From 1831 to 1840 inclusive, the deaths in Boston from consumption were only 1 in 7.587, in Philadelphia 1 in 7.482, and in New York 1 in 5.952.

"It will be seen, by examining the bills of mortality of the city of Boston, that there has been a very striking and uniform improvement as to pulmonary consumption since the year 1811. By the United States census of 1810, Boston contained 33,250 inhabitants; in 1820, 43,298; in 1830, 61,392; and in 1840, 93,452. In 1811, when the population had not probably increased at all from the preceding year, as it was a period of great depression in commercial affairs, the whole number of deaths was 742, of which 221 were of consumption; while in 1840, with a population nearly three times as great, and with nearly three times as many deaths, there were only 19 more fatal cases of consumption, the whole number being but 240; not quite 1 in 8 of all the deaths, and not 3 in 1000 inhabitants."

It must be evident, Dr. H. thinks, to any one who will examine the subject, that it is impossible to explain the great diminution in the number of deaths by consumption, as reported in the bills of mortality of the city of Boston, without admitting that there is an actual decrease of that disease. "To what this decrease may be owing, it is not perhaps easy to determine. It is probably, however, to be referred to a combination of causes, rather than to any single one. These I should say were mainly the great improvements that have taken place in living during the last thirty years; to the increased comforts of life, which are now enjoyed by every class of the community. People are better fed, better clothed, live in more comfortable houses, indulge less in excess of all kinds, and pay more attention to personal cleanliness, than they formerly did. They adopt better and more effectual means to protect themselves from the vicissitudes of temperature, and the low rate at which cotton fabrics can be obtained, and the consequent general use of them, have no doubt contributed essentially to this desirable result.

"It is well known that a cold, moist and variable climate acts not only as a predisposing, but as an exciting cause also of consumption; and unless the system is protected by proper food and suitable clothing by day and by night, many

of the inhabitants of such a climate will fall victims to pulmonary disease. There is no greater error, I believe, than to suppose, that the body can be hardened by exposure to the atmospheric changes without suitable precaution. It would be as reasonable to imagine that it could acquire the power of resisting any degree of heat or any of the powerful chemical agents, as that it could without proper protection withstand the influence of the elements."

"Our only hope of lessening the mortality from consumption, is by using all possible means of prevention; for it is not pretended by those whose opinion is of any value, that this disease in a confirmed state is within the control of remedies. It behooves us then to ascertain, if we can, what these means are, and to use them with diligence."—*New Eng. Quarterly Journ. Med. and Surg.*, Jan. 1843.

National Institute.—Medical Department.—Circular.—The National Institute, at its monthly session, on the 9th of January, 1843, instructed the officers of its Medical Department to issue a circular inviting the attention of the corresponding and resident members, and other gentlemen who feel an interest in the advancement of medical science, to such facts as are connected with disease, health, and longevity, soliciting communications upon these subjects.

The undersigned, therefore, will feel obliged to you for any communications relating to these subjects, and especially for answers to the following inquiries:

What is the medical topography of your district or section of country, and have you any extensive sources of malaria?

What has been the effect of agriculture, the felling and clearing off the forests, the draining and cultivation of the soil, upon the climate, upon the health of the inhabitants, and upon the character of disease?

What manufactories are there in your district, and what is their effect upon the constitution and health of the operatives?

What epidemic and endemic diseases have occurred under your observation, or of which you can get a correct account from others?

What has been the character of the fevers of your district, what the cause, what the most successful mode of treatment, what the pathological changes found upon examination after death, and how far is there proof that they have under any circumstances been transmitted by contagion?

What change has taken place in the type of disease within a series of years in your district, and to what is such change to be ascribed?

What is the average duration or probability of human life in your population; has it increased within a number of years, and in what proportion, and from what causes?

What is the relative degree of health and longevity of the whites and blacks, the increase and mortality of each?

What is the relative degree of health, longevity, and increase of the slaves and free blacks; which suffers most from the influence of our epidemic diseases; and what are the causes which produce different results in these respects upon the two classes?

What is the annual number of marriages, births, and deaths, to each thousand of your population, and what is the proportion of male and female children born?

Have you any cases of great longevity; what have been the occupation and habits of such persons, and were they natives of your district or emigrants, and from what country and place?

Have you any persons who live exclusively upon a milk or vegetable diet, and what is the apparent effect of such diet upon the duration of life, the health, strength, and activity of the body and mind?

What has been the effect of the temperance reformation upon the strength and health of your citizens?

The history of any interesting cases of disease which may have occurred under your observation, and especially in which the pathology was ascertained by post mortem examination, will be regarded as valuable. The discovery of new thera-

peutic agents, or the new application of old ones; also, meteorological observations, with whatever else illustrates the origin, progress, nature, and cure of diseases!

Pathological specimens of morbid structure, with an accompanying history of the origin, progress, and termination of the cases, will be highly acceptable. Such specimens will bear the name of the donor, and be placed in the National Museum.

As one object of the Institute is the formation of a Library, the undersigned will be obliged by the presentation of a copy of your own medical works or those of others, which it may be convenient for you to bestow.

All communications should be addressed to FRANCIS J. MARKOE, JR., Esq., Corresponding Secretary of the National Institute.

THOMAS SEWALL, M. D., *Chairman Medical Dep.*

JOHN M. THOMAS, M. D., *Vice Chairman.*

MARCUS BUCK, M. D., *Secretary.*

HARVEY LINDSLY, M. D., *Of the Com-*

JAMES WYNNE, M. D., *mittee.*

Washington City, D. C., January 12, 1843.

Fictitious Jalap.—An article brought from New York has recently been offered in the Philadelphia market as jalap, but which is a fictitious article. We glean the following account of it from an able report by Messrs. Duhamel, Ellis and Ecky, in the No. of the *American Journal of Pharmacy* for January last.

This article is made up of—

"1st. A large spindle-shaped dried root or rather tuber, flattened on one side, about six inches long and three wide, weighing six ounces.

"2d. The larger half of a similar tuber, transversely cut, forming a segment four inches in its largest diameter, weighing three and a half ounces.

"3d and 4th. Two entire tubers, smaller in size, ovate, one of them kidney form, and pointed, weighing together about five ounces. * * * *

"It is light in weight compared with jalap; externally very rugose, not minutely so, like the jalap, but coarsely furrowed: it is of a light brown colour, with dark shades of black occupying the cavities, through which are interspersed minute shining black specks. Its fracture is rough and uneven, and its interior surface presents a uniform, grayish-white, ligneous appearance, and somewhat loose texture, marked by ash-coloured concentric circles, composed of a harder and more compact substance indicating resin. One of the smaller tubers wanting this distinguishing character appears purely farinaceous. The taste and smell of these different tubers are feeble, sweetish, peculiar, and closely associated, though very distinct from jalap.

"The largest root, divided transversely with a saw, exhibits vertical cavities, proceeding from incisions made through the whole length of the exterior surface to facilitate drying. In No. 2 the incisions are perceptible, but it has no holes like the other. Although a slight disparity exists in the internal appearance of these several tubers, yet their identity, in point of taste and smell, conclusively proves them to be of a common origin. The powder is grayish white, and does not excite coughing or sneezing during pulverization."

Mr. Augustine Duhamel, the chairman of the committee, one of our most skilful pharmacutists, has analysed this article, and finds its composition to be as follows:—Resin, consisting of 15 soft and 20 of dry brittle resin, - 35

Gummos extract, - - - - - 85

Starch mixed with inulin, - - - - - 140

Lignin, - - - - - 116

Albumen and gum, - - - - - 50

Saccharine matter, salts of lime, and loss, - - - 74

500

From trials made with the article at the Philadelphia Hospital, it appears to be destitute of medical properties.

Gun-shot wound of the Face and Neck—Ligature of the Carotid Artery.—By Dr. TWITCHELL, of Keene, N. H. The subject of this case was a cavalry soldier, 20 years of age, who, during a mock fight, October 8th, 1807, received a wound (supposed to have been caused by the wadding and burning powder from a pistol discharged near him) on the right side of the neck and face, extending from behind obliquely forward into the mouth. The whole right side of the head, face, and neck were much burned; and there was a large wound penetrating the pharynx and mouth, by which were destroyed, or greatly lacerated, nearly the whole of the parotid gland, the temporal, masseter and pterygoid muscles; and also parts of the muscles on the anterior part of the neck between the inferior maxillary bone and the os hyoides. The angle, ramus and coronoid process of the inferior maxillary bone, and the pterygoid process of the sphenoid bone, were shattered; and that part of the superior maxillary bone which covers the antrum Highmorianum was so broken that the finger could be readily introduced into the cavity; the right side of the tongue was also somewhat lacerated. Although the external carotid artery and its branches had been divided, yet, at the time of the injury, the hemorrhage was not copious. All the fragments of bone which were so situated that they could be extracted without much difficulty were removed; simple dressings applied to the wound; the patient was put to bed, and an anodyne draught administered.

Oct. 9th.—The patient had rested but little; there was a good deal of arterial excitement; and so much inflammation and swelling of the throat and fauces, that he was unable to swallow or to articulate intelligibly. His respiration was somewhat impeded; his face very much swollen; and he had great pain in the head. V. S. to ℥xx. ; an evaporating lotion applied to the head and face; and a cathartic enema administered, which procured two or three dejections. These remedies appeared to give some relief for a few hours; but in the evening the excitement and pain increased. Ten or twelve ounces more of blood were taken; the lotion to the head and face was directed to be continued; and an emollient poultice to be applied to the wound.

Oct. 10th.—The patient had slept some during the night; the pain and swelling were diminished; and, with much difficulty, he swallowed a little cold water—though a part of it escaped from the wound in the attempt. The local applications were directed to be continued; a tea-spoonful of a solution of borate of soda to be put into the mouth every half-hour; and a little gruel to be given if he could swallow it; and in the evening a cathartic of magnes. sulph.

From this period the patient gradually improved, suppuration became established, and the dead parts separated; “and by the 18th October, ten days after injury, the wound had become cleared of all dead portions of muscle and cellular membrane; and presented a large circular aperture from two to three inches in diameter; at the bottom of which might be distinctly seen the internal carotid artery denuded from near the bifurcation of the common trunk, to where it forms a curve to enter the canal in the petrous portion of the temporal bone. Directly upon this curve of the artery might be seen a dark speck, of a line or two in diameter, which seemed to be a dead portion of cellular membrane adhering to the coats of the vessel. I carefully touched it with a probe; but finding that it adhered, I desisted from the attempt to remove it; and expressed to the patient and his friends my fears of a dangerous if not fatal hemorrhage when that should separate. I applied the usual dressings, left the room, and was about leaving the house, when some one of the family cried out that he was bleeding. I hastened back to his room, and found him deluged with blood. The dressings were immediately removed, and the blood jetted forcibly, in a large stream, to the distance of three or four feet. With the thumb of my left hand, I instantly compressed the artery against the base of the skull; and thus effectually controlled the hemorrhage. The patient had fainted; and fifteen or twenty minutes had elapsed before he was so much revived that I dared to make any attempt to secure the artery. Then, still keeping the thumb firmly pressed on the orifice,

I proceeded to clear the wound from blood; and having done this, I made an incision, with a scalpel, downward, along the course of the artery, to more than an inch below the point where the external branch was given off; which, as stated above, had been destroyed at the time of the injury. Having but one hand at liberty, I depended upon the mother of the patient to separate the sides of the wound; which she did, partly with a hook and occasionally with her fingers. At length, partly by careful dissection and partly by using my fingers and the handle of the scalpel, I succeeded in separating the artery from its attachments; and passing my finger under it, I raised it up sufficiently for my assistant to pass a ligature round it. She tied it with a surgeon's knot, as I directed, at about half an inch below the bifurcation."

Dr. T. removed his thumb and sponged away the blood, not doubting that the hemorrhage was effectually controlled. But to his surprise and disappointment the blood immediately began to ooze from the rupture in the artery; and in less than ten minutes it flowed with a pulsating jet. He compressed it again with his thumb; and began to despair of saving his patient; but resolved to make another attempt. Raising his thumb, he placed a small piece of dry sponge directly over the orifice in the artery; and renewing the compression till a little larger piece of sponge could be prepared, he placed that upon the first; and so went on, pressing the gradually enlarged pieces obliquely upwards and backwards against the base of the skull, till he had filled the wound with a firm cone of sponge, the base of which projected two or three inches externally. Then he applied a linen roller in such a manner as to press firmly upon the sponge; passing it, in repeated turns, over the head, face and neck. I directed that the patient should be placed in bed, with his head moderately raised; and that he should be kept as quiet as possible; and as his pulse was very feeble, he having lost, at that time, between three and four pounds of blood by estimation, he was allowed a little wine and water, and occasionally some broth.

Oct. 20th—(Forty-eight hours after the operation). There had been no hemorrhage; and there was but little excitement. Pulse 95—regular. Patient directed to take gruel and broth; and a little wine and water if faint.

Oct. 24th. Bandage removed and a fresh one applied, without disturbing the sponge.

"*Oct. 26th*. The fetor arising from the accumulation of matter in the sponge had become so offensive as to nauseate the patient. Several of the external pieces of sponge were removed, the wound washed with a weak solution of potass. carb.; lint substituted in the place of the sponge which had been removed, and the bandage applied as before.

"*Oct. 28th*. All the sponge was removed except a small piece directly on the artery, the wound was washed with a weak alkaline lotion; and pledgets of lint, spread with simple cerate, were applied.

"*Oct. 30th*. The ligature on the carotid came away; and the wound was rapidly filling up with granulations."

Nov. 1st. The remaining piece of sponge was removed. The patient attempted, for the first time since the injury, to masticate his food; but the under jaw was drawn so much to the left that the teeth would not meet. To remedy this inconvenience, Dr. T. caused an ingenious blacksmith in the neighbourhood to make an instrument something like Hull's truss; one end of this being fitted to the top of the head, it was brought down, on the right side, under the chin; and the pad on the other end was made to press on the left side of the inferior maxillary bone. He wore this instrument most of the time during the remainder of the treatment; and it effectually answered the purpose.

Dec. 30th. Several fragments of bone and two teeth from the upper jaw have been cast off. The wound was completely cicatrized and the parts consolidated. There was, however, some little deformity in consequence of the depression on the right side of the face.—*N. Eng. Quarterly Journ. Med. and Surg.*, Oct. 1842.

Luxation of Cervical Vertebrae.—Prof. HORNER presented to the class an example of recent occurrence of this rare and commonly fatal accident. A boy, Thomas Brierly, aged ten years, in clambering about an unfinished house, towards the latter part of November, missed his footing on the second floor and fell through the stairway to the cellar, head foremost, a distance of twenty feet. He was stunned by the fall, and was found, as stated by the friends, with his head bent under his body. He was conveyed senseless and motionless to his home. He gradually regained his perceptions but in an incoherent and perplexed manner: his head was much bruised by the fall, his neck was stiff and distorted, forming a large serpentine bulge on the left side, and a deep concavity to the right; his face was inclined downwards to the right side. Circumduction of the head was arrested and the neck motionless. The practitioner, Dr. Henry, who attended him in this stage of the injury, applied leeches to the part, emollients and frictions in succession.

In two days after the accident his common and accurate perceptions returned, but he was affected for some time with tingling and numbness in the left upper extremity.

At the period of his exhibition to the class the deformity of the neck is still obvious, but much reduced; the rotatory motions of the neck can now be executed to some extent, but are much more to the right than to the left side. On tracing the line of the transverse processes of the vertebrae, the upper ones starting from the fourth are about half an inch forward of the lower, indicating clearly the advance of the vertebra on that side, and consequently proving that the left lower oblique process of the fourth vertebra had been luxated in advance of the upper oblique of the fifth, and was there fixed.

We may presume from this state of the accident, that the intervertebral substance there had been partially or wholly ruptured, and that the two vertebrae were held together by the other ligamentous attachments and by the muscles. An attempt at the replacing of such a luxation is viewed with great apprehension by surgeons. Desault, in a case analogous, absolutely declined making the effort, for fear of its fatal issue; and it is related by M. Petit Radel, (*Note Boyer Malad. Chir. vol. 4, p. 118.*) that a young patient at La Charité expired in the hands of the surgeons, upon such an attempt a few days after the accident. This result is very intelligible when we reflect that to disengage an oblique process thus placed, it is necessary to begin by increasing the inflection forwards, or, in other words, by augmenting the displacement, which must in all probability tear up more of the natural fastenings of the bones, and thus subject the spinal marrow to compression or even laceration. Under these circumstances Brierly was dismissed with some general directions for his treatment, and the expectation that his youth would insure a still further erection of that part of the spine. At the period of his exhibition, say about six weeks after the accident, his general health was good, he enjoyed the use of all his faculties, and was going to school.—*Medical Examiner*, Jan. 21, 1843.

New works on Chemistry.—Dr. J. W. WEBSTER, the distinguished professor of chemistry in Harvard University, is about putting to press a fourth edition of his Chemistry. He is also preparing a small volume consisting of diagrams and formulæ of chemical processes, transformations, substitutions, &c. with tables of specific gravities, atomic weights, &c. intended as a convenient book of reference for persons attending chemical lectures, and to refresh the recollection of medical students about to be examined.

Medical Society of Virginia. Prize Essay.—The Medical Society of Virginia offers a gold medal for the best essay on "the value of opium in the treatment of febrile diseases."

It is required that the essays be sent in by 1st October, 1843, and be addressed (post paid) to the corresponding secretary, Frederic Marx, M. D., Richmond, Va. Each essay to be accompanied by a sealed note, giving the name of the author, and the post-office through which to communicate with him.

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George W. Beirne,	Virginia.	Remittent Fever.
William T. Core,	Virginia.	Blennorrhœa.
Ezekiel C. Chew,	New Jersey.	Chorea.
John B. Coburn,	Pennsylvania.	Cynanche Trachealis.
Martin L. Cornick,	Virginia.	Pneumonia.
Josiah Curtis,	Connecticut.	Psycho-physical nature of man.
Asa T. Dix,	Virginia.	Dysentery.
Henry W. Ducachet, Jr.,	Pennsylvania,	Retrospective view of Surgery.
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Joseph R. Early,	Virginia.	Remittent Fever.
J. Richard Elliott,	Virginia.	Pleuritis.
Samuel Floyd,	Pennsylvania.	Scrofula.
Benjamin S. Fisler,	New Jersey.	Dysentery.
James T. Gee,	Alabama.	Typhoid Fever.
Rice B. Garland,	Virginia.	Perspiration.
Wm. A. Gardiner,	Pennsylvania.	Amaurosis.
Peter H. Heiskell,	Virginia.	Phthisis Pulmonalis.
Joseph Huyett,	Pennsylvania.	Anasarca.
John E. Houard,	West Indies.	Puerperal Convulsions.
Joseph Hopkins,	Maryland.	Empiric Nostrums.
Theophilus A. Hall,	Virginia.	Dysentery.
Samuel Jones,	Pennsylvania,	{ Moral Influence and Responsi- bilities of the Medical Profession.
William R. Kerr,	Pennsylvania.	
William A. Leland,	Alabama.	Intermittent Fever.
Jacob B. Masser,	Pennsylvania.	Yellow Fever.
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Thomas S. Marchand,	Pennsylvania.	
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Samuel P. Oliver,	South Carolina.	Scarlatina.
Frederick L. Parham,	South Carolina.	Acute Bronchitis.
Thomas K. Price,	Virginia.	Tracheo-Laryngitis.
Lewis Paullin,	Florida.	Angina Pectoris.
J. T. Phileas Proulx,	Canada.	Causes of Mania.
James D. Robison,	Ohio.	Acute Hepatitis.
A. A. J. Riddle,	Georgia.	Cholera.
Frederic A. Rees,	England.	Geology, &c. of Cincinnati.
William T. Stuart,	Virginia.	Cataract.
Powhatan B. Stark,	Virginia.	Intermittent Fever.
Alfred Taylor,	Ohio.	Endocarditis.
Ellerslie Wallace,	Pennsylvania.	Rheumatism.
Wiley Wright,	Virginia.	Acute Gastritis.
William W. Watts,	North Carolina.	Diseases of the Pleura.
John T. Wilkins,	Virginia.	Dysmenorrhœa.
		Crural Phlebitis.
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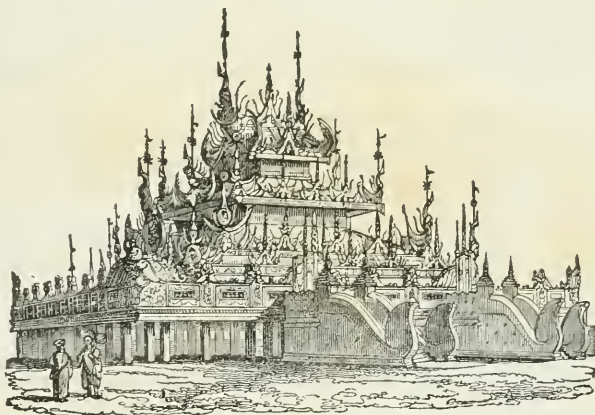
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During the last half century the most civilized nations of Europe have been contending with each other for the glory of discovery; and there is now scarcely a shore, however remote, or the interior of a continent, however barbarous or difficult of access, which has not been explored and described. Materials have thus been provided for a more complete, interesting, and authentic description of the earth than could have been drawn up at any former period.

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## PART III.

## GEOGRAPHY CONSIDERED IN RELATION TO THE VARIOUS REGIONS OF THE GLOBE.

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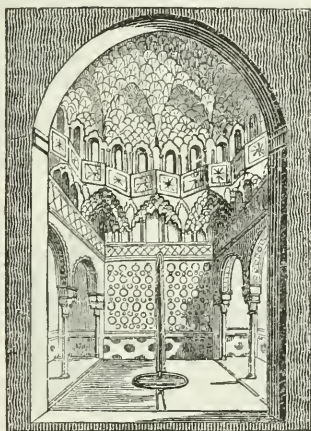
the curious traveller is soon attracted towards the Alhambra (*fig. 315.*), the ancient palace and fortress of the kings of Granada. It is the noblest specimen existing of Moorish architecture; and nothing perhaps in Europe, out of Italy and Greece, can come into competition with it. The site is fine, resembling that of Windsor, on a hill above the river. Its exterior structure, however, is the reverse of beautiful: a huge heap of ugly buildings huddled together, without the least seeming intention of forming one habitation; the walls only gravel and pebbles daubed over with plaster. On entering the threshold, however, the visitor seems transported into a fairy scene. He passes through a range of apartments; the baths,



The Alhambra.

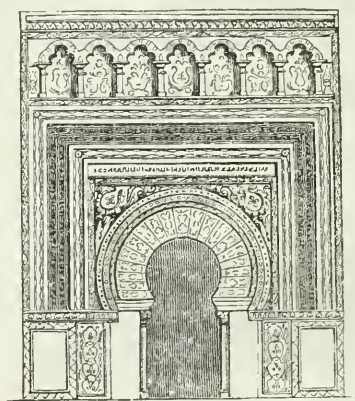
the Court of the Lions; the Hall of the Abencerrages (*fig. 316.*); the Golden Saloon, or

316



Hall of the Abencerrages.

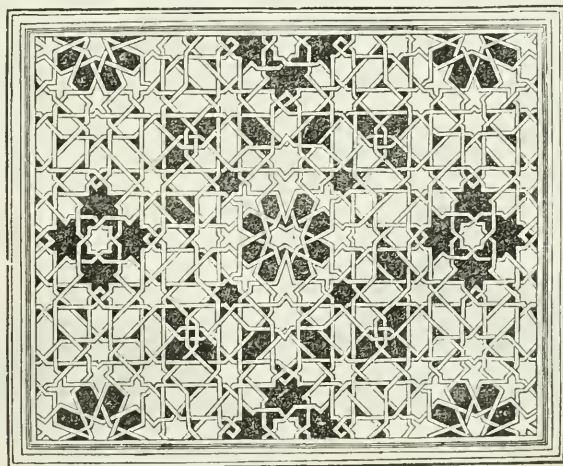
317



Gate of the Sanctuary of the Koran.

Hall of the Ambassadors; the Gate of the Sanctuary of the Koran (*fig. 317.*); the Tower

318



Mosaic Pavement.

been found to the south of the line. The American Flamingo (*fig. 1102*), fully as tall as the European, is of a much more beautiful and intense scarlet; while the Wood Ibis, in form at least, seems to represent the Glossy Ibis so common in the south of Europe. The Herons of Carolina and Florida are numerous, and comprise several large and beautiful species. The magnificent Scarlet Ibis, also, is there not uncommon; yet few of these elegant wading birds extend to the northern part of the United States.

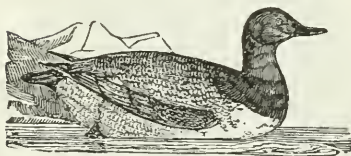
Among the Ducks and other swimming tribes, there is a general similarity in the species to those of Arctic America, two or three only being restricted to the warmer shores of the southern regions. The chief of these is the splendid *Dendro-nessa sponsa* Sw., called the Summer or Tree-Duck of South Carolina. The Canvass-back Duck (*Fuligula Vallisneria* Wil.) (*fig. 1103*.) is chiefly found in temperate America, and is celebrated for the exquisite delicacy of its flesh, which is rich, juicy, tender, and altogether unrivalled by any other of its tribe. The Canvass-back, in its plumage very much resembles the English Pochard (*F. ferina*), but is larger; its principal food is the root of a vallisneria, a grass-like plant, which grows at the bottom of freshwater shoals, at from seven to nine feet deep. In winter these birds sometimes assemble in such numbers as to cover several acres, but they are very shy, and can only be approached by stratagem.

The American Widgeon (*Mareca Americana* L.) (*fig. 1104*), called also the Bald-pate, is about the size of the European species, but of a handsomer plumage; it does much injury



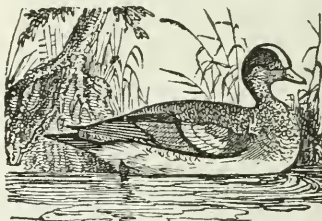
American Flamingo.

1103



Canvass-back Duck.

1104

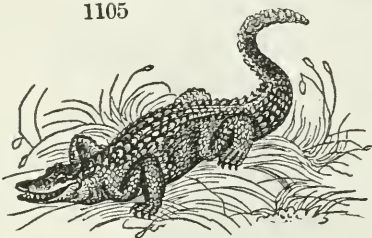


American Widgeon.

to the rice plantations in the Southern States, and is the constant attendant of the Canvass-back ducks, thieving from these expert divers the fruits of their industry. The Widgeon, who never dives, watches the moment of the Canvass-back's rising, and before he has his eyes well opened, snatches the delicious morsel from his mouth, and makes off. On this account the two species live in perpetual contention. The Bald-pate ducks are said sometimes to perch on trees; they feed in company, guarded by one. Nearly all the rest of the duck tribe occur in the northern regions, which they quit for the United States during severe winters, and return to breed in the spring. America, like Europe, thus presents us with a double migration, and both for the same purposes; namely, to avoid cold, procure sustenance, and to rear their young.

The reptiles offer little that is definite in regard to their distribution. The Alligator (*Crocodylus lucius*) (*fig. 1105*), does not occur north of the Carolinas and the Red River, and in severe winters he buries himself in the mud, and lies in a torpid state. The Rattle-

1105



Alligator.

1106



Rattlesnake.

snakes (*fig. 1106*.) are peculiar to the New World; several species are met with in different parts of the United States, but those of North America are different from those of Brazil. There are several land tortoises, but they are all of a moderate size. Some curious Sala



marshy districts but little elevated above the level of the sea, afford no protection against these destructive phenomena, which are equally prevalent in cold, in temperate, and in tropical climates. They are, however, generally considered more frequent near to coasts; thus, Syria, the coasts and islands of Asia, America, the European coasts of the Mediterranean, and Iceland, are most subject to them; while the plains of Africa, Asia, and the North of Europe are least exposed. Viewing the whole earth, and including every slighter agitation, earthquakes appear to be exceedingly numerous, and it may be maintained that not a week passes in which the earth's surface in some place or other is not more or less agitated. The great number of concussions observed in civilized countries, and the fact that some districts are constantly agitated by them, entitle us to draw the conclusion. Their return in the places most subject to them, and in the places where they are less frequent, is not regulated by any precise period of time. Their appearance is not connected with any particular season of the year or state of the atmosphere, and they take place by day as well as by night.

*Phenomena of Earthquakes.* The phenomena peculiar to earthquakes are in themselves sufficiently simple. They consist in tremblings and oscillations of the earth's surface, called shocks; extending over greater or smaller tracts of country, and frequently following a particular direction. The shocks appear at first chiefly as perpendicular heavings; then as horizontal undulations or oscillations; lastly, in some instances, there is a violent agitation: the motion is more or less rotatory. If to these we add the rending, slipping, rising and sinking of the ground, the violent agitations of the sea, lakes, rivers, and springs; consisting, in springs, in their drying up or bursting forth with great violence; in lakes, rivers, and the ocean, in their falling and rising, and rushing backwards and forwards, owing to the sinking and rising of the land, we obtain an enumeration of the principal phenomena. As the subject is very interesting, we shall view it somewhat in detail, and under the following heads: — 1. Shocks. 2. Extent of earthquakes. 3. Duration of shocks. 4. Magnitude of rents formed, and the phenomena connected with them, 5. Elevation and subsidence of the land. 6. Agitations in the sea. 7. Notice of particular earthquakes.

(1.) *Shocks.* The slighter shocks of an earthquake, consisting of perpendicular heavings and horizontal undulations, commonly produce rents in houses, moving light objects in them, as articles of furniture. Persons unacquainted with the phenomenon, or who do not perceive it from the subterranean noise resembling thunder which accompanies it, feel uneasy while in their beds, but particularly when sitting, and believe themselves seized with a sudden giddiness. The shocks proceed gradually to be more violent, and then they are very easily perceived even by the inexperienced. Then the most substantial buildings are shattered to pieces, and the inhabitants buried beneath their ruins: while buildings of a lighter construction are only rent, and very slender reed huts are least of all exposed to destruction. In some cases the fracturing, or as it were trituration, surpasses description. Hence, for the plainest reasons, it is most dangerous to remain in houses or inhabited places; but even the fields and mountains themselves afford no perfect security, inasmuch as the fields frequently in some places open into fissures, and are rent asunder; while mountains are not only rent, but slide down into the valleys, dam up rivers, form lakes, and cause inundations. Although the desolation produced by these convulsions exceeds all description, this is much more the case with the rotatory motions; a species of motion, however, the existence of which has been denied by some geologists. In proof of it, however, it may be mentioned, that during the earthquake of Catania, whose general direction was from S. E. to N. W., many statues were turned round, and a large mass of rock was turned  $25^{\circ}$  from South to East. But the rotatory motion was more strikingly exemplified in the earthquake at Valparaiso, on the 19th November, 1822, by which many houses were turned round, and three palm-trees were found twisted round one another like willows. These rotatory motions of masses of rock are particularly interesting when viewed in connexion with the phenomena of faults or shifts among strata in non-volcanic districts. It is only the slighter earthquakes that pass by with a single shock; in most of them more shocks follow at short intervals, and for the most part the number is proportioned to the violence of the concussion. The first shock is sometimes the most powerful, but the second is as often, if not oftener, equally violent. Further, the concussions are also repeated after longer intervals, as the earthquakes in Syria, that sometimes continue for a number of months, with longer or shorter intermissions; but the first catastrophe is generally the most violent and destructive.

(2.) *Extent of earthquakes.* It is the agitation of the sea that points out the great extent of the tracts of land convulsed by earthquakes. In this respect, the earthquake at Lisbon, in 1755, was the most remarkable and most violent that ever visited Europe. In consequence of it, by the concussion on the bottom, or momentary rising or upheaving of the submarine land, the sea overflowed the coasts of Sweden, England, and Spain, and of the islands of Antigua, Barbadoes, and Martinique in America. In Barbadoes the tide, which rises only 28 inches, rose 20 feet in the bay of Carlisle, and the water appeared as black as ink, owing probably to bituminous matter thrown up from the bed of the ocean. On the 1st of November, when the concussion was most violent, the water at Guadaloupe retreated twice, and on its return rose in the channel of the island to a height of from 10 to 12 feet.



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This Institution has been established under the patronage of many of the most celebrated Surgeons in the United States, being designed as a DEPOT of IMPROVED BANDAGES required in ORTHOPEDIC PRACTICE; or in other words, for the treatment of cases of deformity, such as CURVATURE OF THE SPINE; CLUB-FEET; CONTRACTED LIMBS; WRY-NECK; BOW-LEGS; KNOCK-KNEE; FRACTURES, DISLOCATIONS; and HERNIA, (or Rupture,) PARALYSIS, relaxation of muscles,—producing pain in the side, back and hips; numbness of the legs when standing long,—in a word, all derangements requiring the use of a Bandage for restoration, and which are too numerous to state in this notice.

We would here state that many decided improvements have been presented to the Institute by its PATRONS,—Professor VALENTINE MOTT, to whom we are much indebted for his liberality and philanthropy, has kindly tendered models of apparatus presented to him by that very distinguished Orthopedic Surgeon, M. JULES GUERIN, of Paris, and has suggested several decided improvements in Bandages, which have been subsequently tested, and found to answer expectation.

Physicians, Surgeons and the afflicted, are thus informed that they can obtain such Bandages as will suit special cases, by making application at this Institution, by letters or otherwise, describing the derangement; or charge of the patients will be taken by the PRINCIPAL, who has had much experience in the treatment of deformity; and has made arrangements to accommodate patients from abroad with board; and children (circumstances permitting) with schooling, while under treatment; thus affording great facilities to those who may reside in distant parts of the country. Children under treatment for Club-feet, are not, generally, confined to the house more than four weeks, and after that might attend school; and as to the treatment, we will make a few remarks.

Distortion of the feet in their most distorted

form, may be cured in infants by the use of a properly constructed Bandage, and attention from a person skilled in its use,—even without submitting the child to actual pain, as there is no deformity of the bones, simply a contraction of the tendons and fascia, which yield most readily to well regulated extension and gentle efforts, made by manipulation, and maintained by a bandage or shoe constructed for that purpose. In persons somewhat advanced in years where the tendons and fascia has become more firm in texture, a simple division of them, and the use of a similar bandage to that used for infants, requiring the same attention, are most readily cured. As to the operation of dividing the tendons and fascia, it is one of the most simple, and attended with as little pain and danger as any that are performed in the practice of surgery; yet, by no means ought persons to permit themselves or their children to be treated by persons unacquainted with surgical science, as frequently unfavorable indications present that are readily removed by proper treatment, that without such aid would prove most serious; and which have actually taken place under treatment of unskilful pretenders in surgical science; hence, the apprehension entertained by so many as to the risk attending the operation for the cure of club-feet, from which, in the hands of a skilful Surgeon, there need be no more apprehension entertained than from the operation of extracting a tooth or getting bled. This assertion is made knowingly, and sustained by the experience of many eminent Surgeons, who have operated on hundreds of persons under every form of contortion of the feet or limbs, as the muscles of the thigh when contracting the knee joint, and of the arm when contracting the elbow joint and fingers.

That persons may more readily comprehend the character of the deformities susceptible of being benefited by treatment, we have illustrated a few of the most common cases by engravings, and given a brief description of them.



some having the ascendancy in power, have shortened and destroyed the equilibrium of the body, and an effort to sustain the body in the erect position, is the cause of the swinging of the arms and twisting of the body when walking.



and also shuffle in walking.



will be observed to roll or twist, that is, one side will advance more than the other, and one leg will be moved with a quicker motion than the other,—and by close observation of an individual thus exercised; the slightest

Fig. 1, is a case of lateral curvature of the spine, commencing immediately above the hips, and presents an apparent fullness of one side and an awkwardness in walking, the individual is said to be one-sided, from his shuffling gait and advancing one side. In slight cases it is not readily observed, as the individual swings his whole body, indicating an enfeebled and deranged condition of the muscles,

Fig. 2, is a case of lateral curvature, producing a projected shoulder-blade, and a fullness of one side of the breast, the right shoulder appearing much larger than the left, also the left hip is apparently much larger than the right. The first indication of this deformity, is an enlargement of one shoulder, and is observed by the dress-maker, who finds much difficulty in getting the dress to fit, such individuals appear stiff in the body

Fig. 3 represents the mode of determining lateral curvature of the spine—drop a plumb line from the centre of the groove in the nape of the neck to a line dividing the hips, and the deviation of the spinal column is indicated when there is considerable deformity, but the only true mode of determining a slight deviation, is to let the person be stripped and walk from you, the body

deviation can be observed. It is of the utmost importance to determine a curvature of the spine in the incipient stage, as it is then most readily corrected—if permitted to progress, terrible deformity is the consequence, that is not only painful to the beholder, but a source of distress through life to the individual, and a source of painful reflection to parents who have thus neglected an unfortunate child that might have been cured had timely aid been offered.



Fig. 4 represents a person's form and appearance when wearing the apparatus for treatment. It can scarcely be observed when under the clothes, consequently, persons under treatment are not subject to exposure.

There are other forms of curvature of the spine, such as a projection of the spine backwards, producing what is commonly called hunch back, these cases can be much benefited by judicious treatment when in the incipient stage, after which, little or no advantage is derived from treatment. There is another form of curvature of the spine, a curving in of the spine—the individual suffers from much pain in the back, and is said to have a weak back; such cases are much relieved by a suitable Bandage. There are many other deformities benefited by treatment, which are produced by various causes—such as burns, scalds, inflammation, ulceration, constitutional weakness and acquired bad habits, &c. &c.

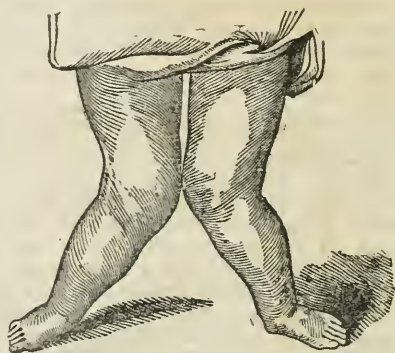


Fig. 5 represents a case of KNOCK-KNEE, this deformity is the consequence of general debility in most cases, but is produced by dancing when very young, or weak, or from jumping from a height, thus straining the ligaments and fascia which sustain the arch of the foot, which yielding, produces flat-foot, and a tendency of the knees inward. This is a curable derangement when in the incipient stage



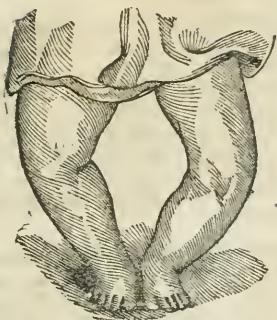


Fig. 6 represents a case of Bow-LEG, the consequence of an excessive contraction of one set of muscles, children of a good constitution are frequently found thus deformed, and it is not unfrequently found to be hereditary in families. This deformity can also be remedied by properly constructed Bandages applied when the individual is in infancy and just commencing to walk, cases have been cured at 10 years of age.

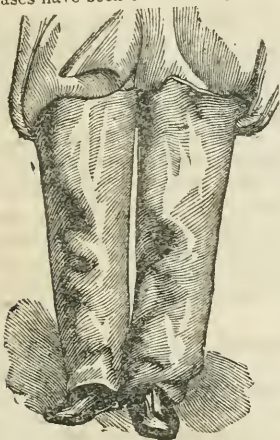


Fig. 7 represents a boy cured at 10 years of age, and with the apparatus on that cured him.



Fig. 8 represents a contraction of the thigh, the stiffening of the knee or limiting extension in the leg, also a contraction of the muscles of the calf of the leg, this deformity is also curable in all cases where there is not a bony union of the joint; many persons within the last few years have been cured although having labored under such deformity for many years, and there is no doubt but what two-thirds of the cases supposed to be incurable, could by proper treatment, be perfectly cured. This is the opinion of all experienced Surgeons in Orthopedic practice.

This is the opinion of all experienced Surgeons in Orthopedic practice.



Fig. 9 represents a case of CLUB-FOOT where the individual walks on the outer angle, the sole of the foot being vertical and the toes turned in towards the leg. This is the most common of the varieties of Club-feet—children most frequently being born thus deformed, and if treated when young are readily cured by Bandages alone.



Fig. 10 is a case of Club-foot where the individual walks on the inner margin of the foot. This form of Club-feet are not so common—children are seldom born with this variety of the deformity, it is mostly induced by an injury sustained in the ankle joint, and a careless bad habit of walking, it is also a deformity that is readily cured in children.

These are the most common forms of Club-feet, and are of various degrees, from slight to that of great deformity.



Fig. 11 represents what we understand to be a cure of the above cases; as many suppose it impossible for such feet to be straightened, but it is an established fact that Club-feet can be straightened by careful and judicious management.



Fig. 12 represents a contracted Arm, which is as readily cured as that of the leg, and requires very similar treatment.

In addition to treatment of deformity in this Institution, many other useful Bandages are kept, such as Trusses for the relief and cure of rupture. Several varieties of Trusses are kept, one of which claims especial attention, as it is worn with much comparative comfort to that of others, and has cured many cases of long standing. It was invented some years since by Dr. J. KNIGHT, now Principal of this Institute. It is admirably adapted to all classes of individuals—infants not a week old wear it without being in the least injured by its use! 11

has no back pad and is so constructed as to support the abdomen above the aperture through which the bowel protrudes, and thus sustains the whole mass of bowels above the weak parts, enabling them to contract and thus close the aperture, as they are rendered secure from any irregular or undue force from within outward. This Truss requires great nicety in the fitting of it to the individual, and is the only objection to it, but we cannot expect a complete apparatus to be otherwise, consequently persons must apply to the proper persons in order to gain all the advantage to be derived from its use. We make these remarks, as persons have been attempting to imitate this Truss, but have failed to give satisfaction to the wearer, who subsequently have worn Dr. KNIGHT'S Truss with much satisfaction, it having been properly constructed and fitted to them.

Persons sending for a Truss must state the form of the hips, whether narrow, wide, or round, and the condition of their person, whether corpulent or spare in flesh, with the number of inches around the hips, and the side affected, also the extent of the protrusion; by so doing, they can be fitted perfectly. It is also necessary where Bandages are wanted in cases of Prolapsus Uteri, or Belts for the relief of tumours, corpulency, laxity of the abdomen, &c. &c.

In order to obtain a suitable Bandage for the relief of curvatures of the spine, it is necessary to fit the individual from the hips to the neck with glazed muslin, then cut it open in front so as to get it off; this forms the most correct measure.

To obtain an artificial limb, it is necessary to send a cast of the limb to which it is to correspond, by this means persons at a distance can be supplied with the latest improved and most perfect artificial limbs.

#### RULES OF THE INSTITUTE.

1st. All Physicians and Surgeons who obtain Bandages from this Institution are considered Patrons, and are entitled to attention from the Principal of the Institute, who will have constructed to their order, and in accordance to their direction, Bandages to suit special cases.

2d. All Bandages, whether improvements or those in common use in foreign countries, if ordered and described by a Patron to be made in this Institute, are considered to be the property of the Institute, it being the privilege of others to use similar bandages if desired: *such bandages to be known in the Institute by the name of the inventor or person who may introduce a useful bandage not in common use in this country.*

3d Patients wishing to obtain Bandages

from this Institute, must state whether under treatment or not by a regular Physician or Surgeon, if under such treatment, it is expected that they will obtain their consent; and under such circumstances, no person connected with this Institute will be permitted to intimate a different course of treatment from that prescribed by their attending Physician or Surgeon, nor shall they make any inquiries as to their treatment.

4th. Patients who are not under treatment by a regular Physician or Surgeon, can obtain Bandages and have the advice of the Principal of the Institute, and where other medical treatment is required than that of the use of a Bandage, charge will be made for such professional service; and in no instance will the Principal recommend patients to any particular Physician or Surgeon, or make any comment upon the qualifications of Patrons of the Institute.

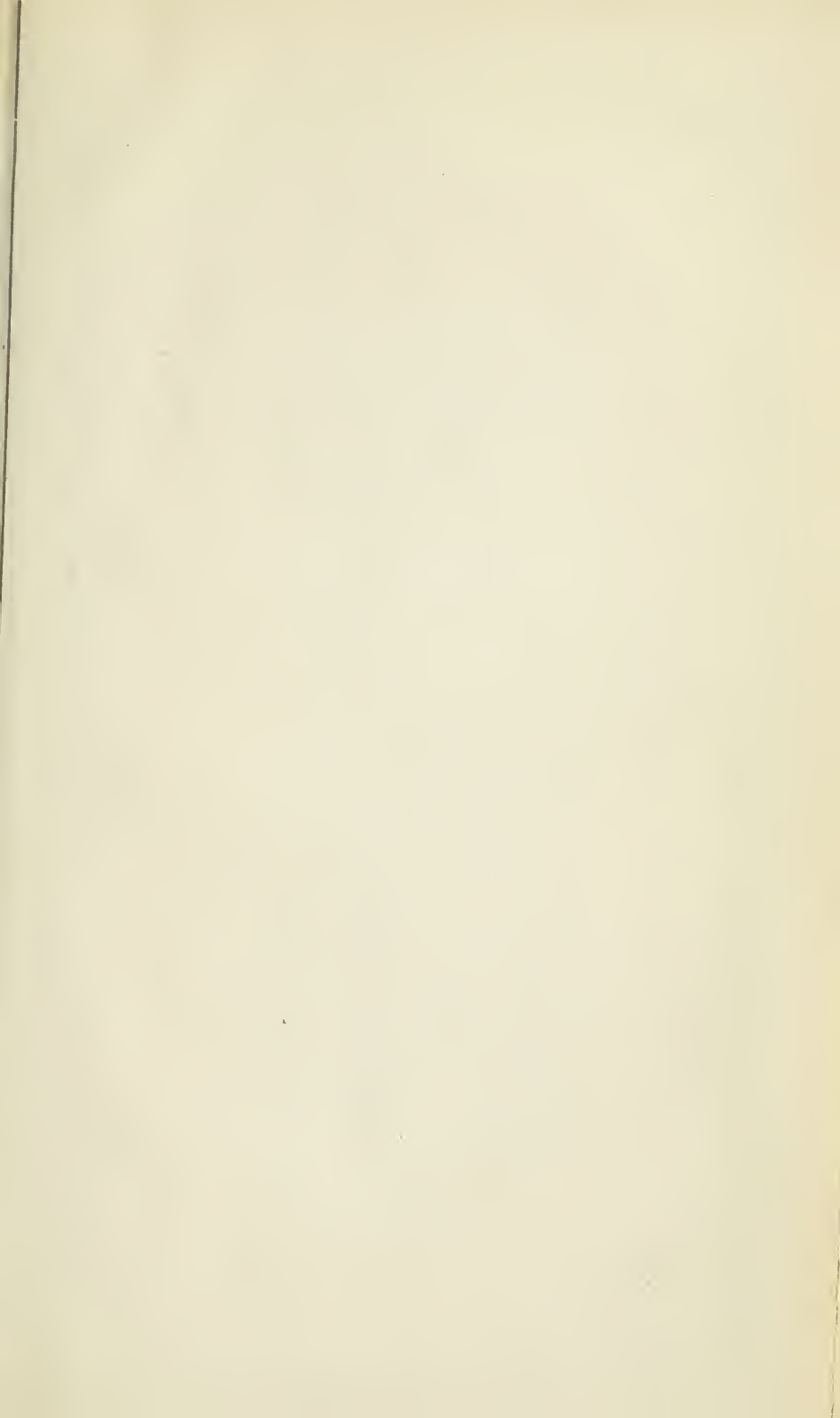
5th. All Bandages not constructed to order, and not fitting the individual for whom they were purchased, if not injured, can be returned and others will be furnished free of expense (transportation excepted.)

6th. If requested by a Physician or Surgeon, the Principal of the Institute will take charge of the fitting of Bandages to their patients.

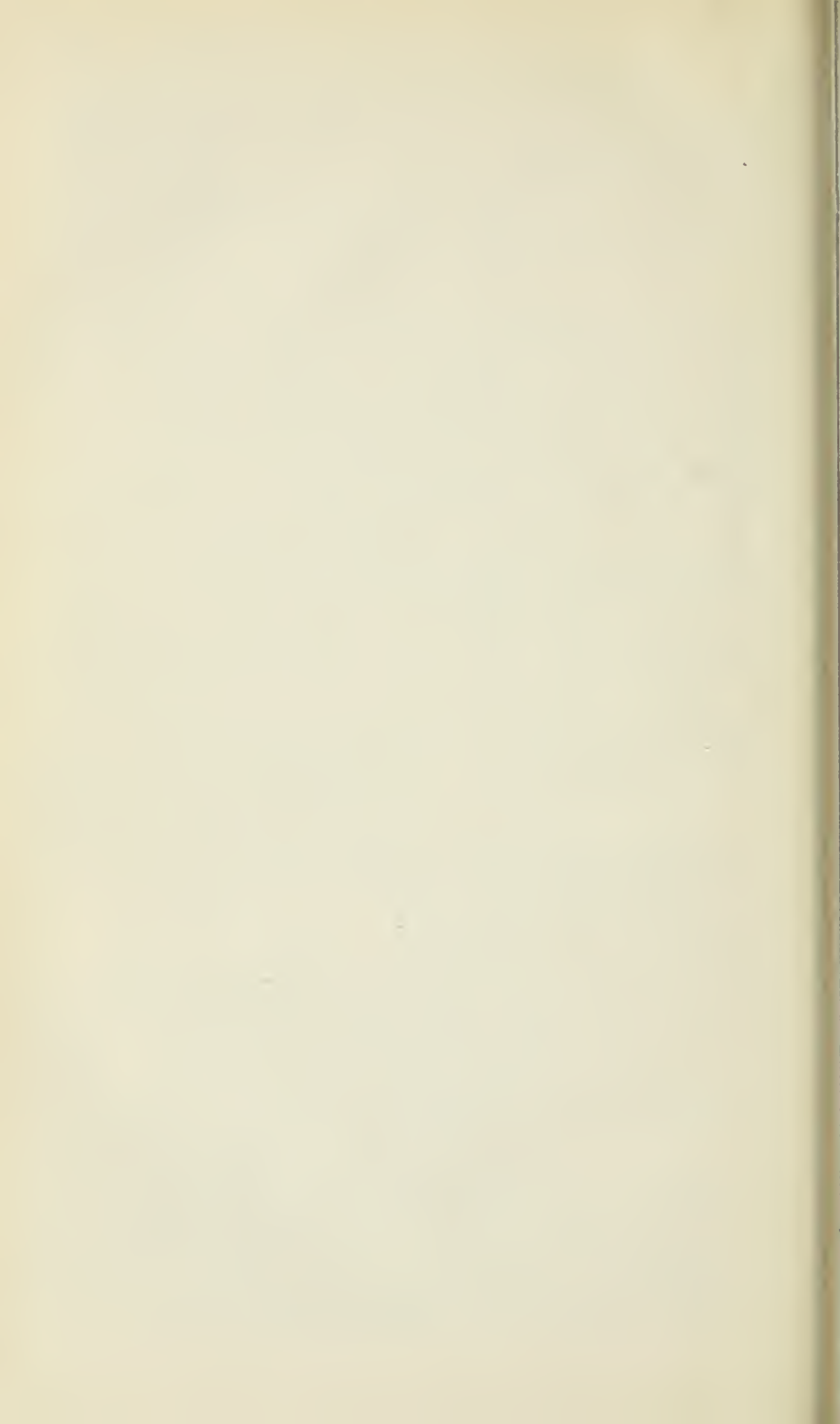
7th. Patients who are not under treatment, and feel so disposed, can obtain Bandages and apply them themselves; but no accountability will be taken for their success in affording relief, as in such instances they most frequently fail.

This Institution has been established two years, since which, several hundred persons have found relief from various afflictions by the use of properly constructed Bandages, and advice as to their use, and other treatment that might be advantageously conjoined, which in many instances, is essentially necessary to the success of the treatment, and determines the necessity of being treated by an experienced and skilful Surgeon, instead of relying on mere mechanics as heretofore. And all that appears to be required to render this one of the most useful institutions in this country, is to give it publicity, and is our only apology for offering this circular, which is respectfully presented to Physicians, Surgeons, and heads of families.

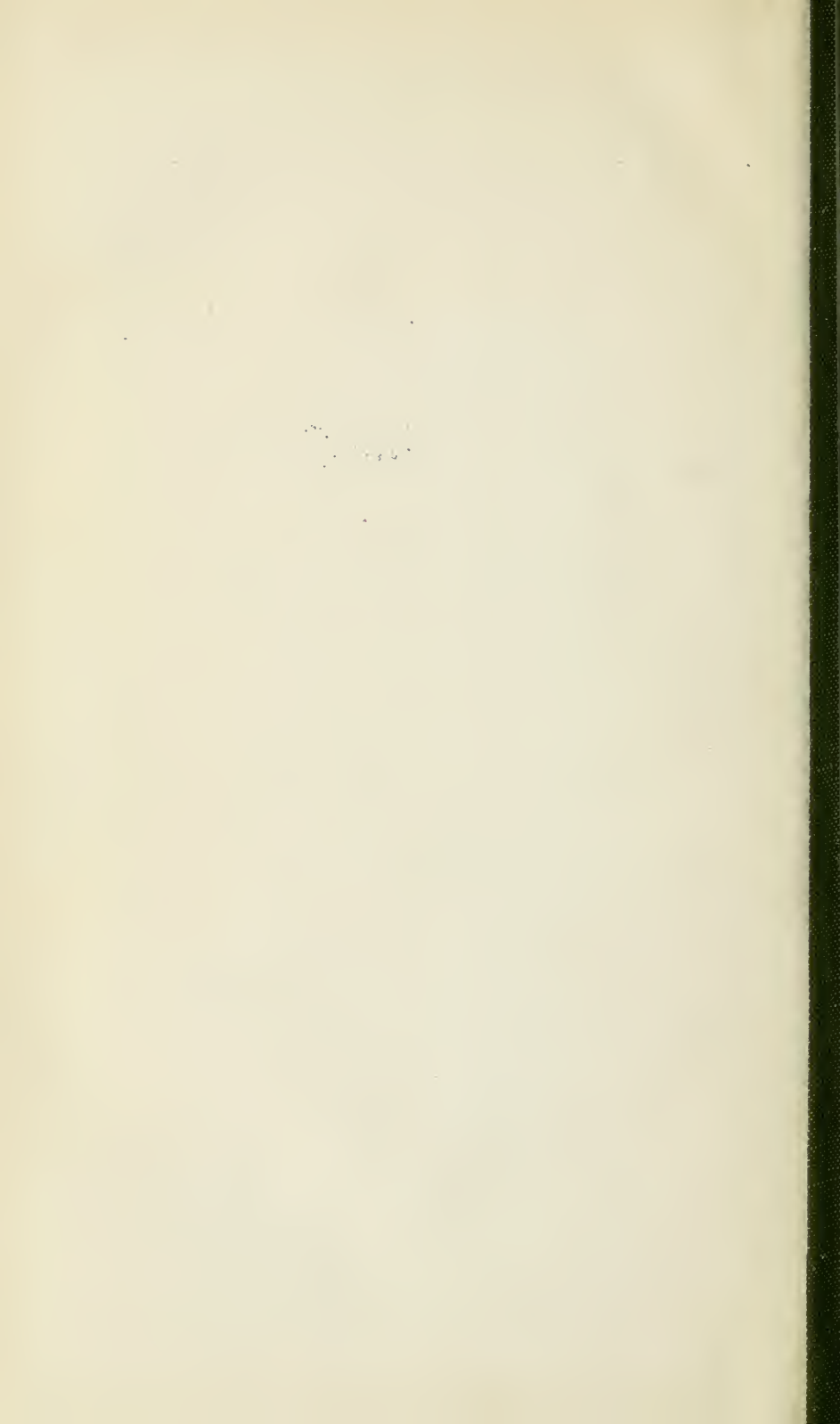
The prospect that has already presented, augurs well for the future, as it is now patronized by some of the most distinguished Surgeons in this country, whose example we may reasonably expect will be followed by the profession generally, and of whom patronage is most respectfully solicited; also, their aid in devising useful constructions for the relief of the afflicted.













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